JANUARY, 1955

Industrial FINISHING

Published Monthly in the Interest of Product Cleaning and Finishing by Practical Publications, Inc., 1142 N. Meridian Street, Indianapolis 4, Ind.

1865
1955

Now in our 90th Year

● This year—1955—marks the beginning of our 90th year of service to American industry. Since the company was founded in 1865, Lilly Varnish Company has followed a definite pattern of progress, always stressing QUALITY and SERVICE. Plant facilities and services have expanded steadily to meet the increasing and changing demands of industry. And, in the specialized field of high quality INDUSTRIAL PRODUCT FINISHES, Lilly today enjoys a well-earned position of leadership. Development of coatings for manufacturers' specific use is one of the more important technical services designed by Lilly to help industry in the field of finishing. If you have a finishing problem in your plant, why not let our technical staff take a crack at it? We'll welcome the opportunity to serve you.

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one of a series of advertisements on . . .

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organic finishes for industry since 1876

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A baking spraying enamel for a protective and decorative coating on metal seems a fairly standard product. That product must meet *your* exact requirements for bake, color, gloss, appearance, toughness, marproofness, chemical resistance or several dozen other general and specific requirements. The product may be perfect for all these, but without the skill to keep it standardized, without the technical service to follow up and see that it doesn't cause any trouble in *your production line* under your conditions, it will not succeed.

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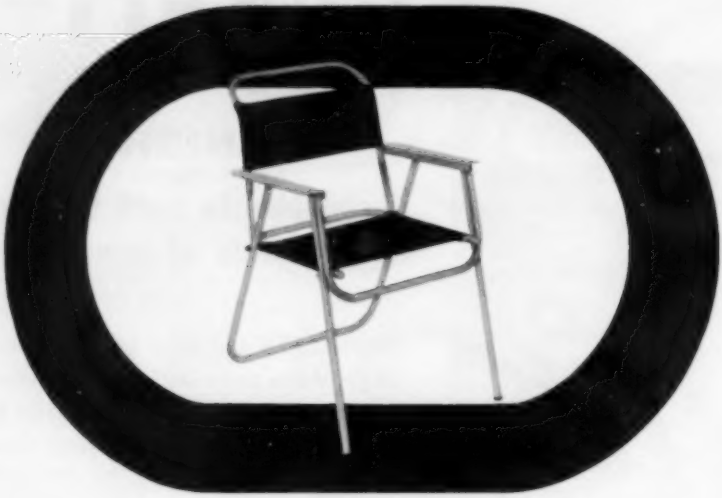

PENNANT CORP. uses a special finish to help make this indoor-outdoor lawn chair a top-value . . .

This folding lawn chair by Pennant requires a finish that will withstand weather for long periods of outdoor use, in colors that will satisfy the demands for high fashion when used indoors.

The solution was found in a permanent automotive type finish specially adapted by our specialists to meet these individual requirements. The enthusiastic acceptance given this chair in the market proves again that the right finish adds to saleability.

The Better the Finish, the Better the Buy

GRAND RAPIDS VARNISH CORPORATION

MAKERS OF THE FAMOUS Guardsman® *FINISH AND* Guardsman® *CLEANING POLISH*

GRAND RAPIDS, MICHIGAN

JANUARY, 1955
Vol. XXXI, No. 3

BPA

A monthly magazine for company executives, production superintendents, process engineers, chemists, purchasing agents, paint shop and finishing department foremen of industrial plants where product surface cleaning and painting are major operations in the manufacture of parts and products of all kinds.

Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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31 THIRTY-FIRST YEAR OF PUBLICATION

Corrosion Resistant Tape. Plastic tape has been developed which, when wound around metal pipe to be buried underground, will protect the metal against corrosion for many years. The tape is a tough polyethylene adhesive film. Its resistance to galvanic, water and chemical corrosion is not expected to vary.

No heat, liquids or solvents are used in its application. The tape has been subjected to hundreds of tests both in the laboratory and in the field with excellent results.

* * *

Flooring Inlaid With Metal. The modern trend of combining metal with other materials for ornamental effects has found its way into floor coverings.

In a recent showing in New York, stainless steel, copper, and brass were shown inlaid in vinyl, cork and leather floor coverings. A turquoise vinyl had narrow bands of stainless steel and brass interlaced to form a border. Copper links inlaid in white vinyl formed a chain border. Light and dark shades of cork were used for an all-over chevron design outlined with copper. Leather tiles combined with copper make a nice combination.

* * *

Rust Converter. A liquid called "FerRoSeal" is said to chemically convert rust into a protective iron phosphate coating.

It is claimed that this process does away with the need for sand or shot blasting or acid pickling; and only requires a follow-up wire brushing to remove the scale and loose rust.

The distributor states that this material is not an additive, and that it is compatible with coal tar products, asphaltum, gilsonite, vinyls, silicones, neoprene, zinc-base materials, and other coatings, as well as paint.

* * *

More Durable Veneer. A research program for development of a process that will make finished hardwood veneer more resistant to burns, scratches, alcoholic liquids, and other deteriorating influences, was discussed by the Fine Hardwood Association directors at their recent meeting at the laboratory of Timber Engineering Co., research affiliate of National Lumber Mfrs. Association.

C. A. Rishell, Teco's director of research, presented a proposed program that would seek to develop a process or material, or both, that would provide the required qualities.

* * *

Alarm Wrist Watch. For timing production operations, laboratory phases, or "alerting" to appointments, a new alarm wrist watch is said to be a valuable aid to industry.

Imported direct from Germany from one of the world's largest manufacturers of stop watches, the "Edscorp" is a 17-jewel precision timepiece of fine quality with luminous dial for night use. Alarm is set by turning glass rim. Tone may be adjusted loud or

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* * *

A Safe Pilot Light, called Saf-T-Flame pilot, is designed especially for ovens, air heaters, immersion heaters, furnaces, etc.

It operates on the flame conductivity principle, using the ability of a gas flame to conduct an electrical current better than air. By placement of suitable electrodes in the pilot gas flame, a small electric current flows across the pilot flame, but stops when the flame is extinguished. This current interruption operates a relay which controls electrically operated valves in the fuel line. Result: When the pilot light goes out, the fuel supply is cut off.

* * *

"Seecloth," a chemically treated cloth for cleaning and mistproofing goggles, glasses, masks, windows, mirrors, windshields of autos, trucks, planes and locomotives, has been developed by Hygiene Research Inc., of 684 Broadway, New York, N. Y., and 2704 S. Hill St., Los Angeles, California.

Merely wiping the glass or transparent plastic with the Seecloth is sufficient not only to clean but also to mistproof it for a period of a few hours to two weeks, depending on atmospheric conditions. The cloth can be used over and over and with care remains effective for six months or more.

* * *

Heat Without Fuel. The functions of heating in winter, cooling in summer, performed by Acme Flow-Temp Heat Pumps, are fully described in a new catalog published by Acme In-

(Continued on page 120)

Production is increased and quality of the work is improved over former hand spray method

● When General Electric formerly hand sprayed their home laundry equipment—automatic washers and dryers—they painted 9.74 washers with a gallon of paint. Now, in the new and modern plant at Appliance Park, Louisville—where they're using the Ransburg No. 2 Process—they get 17.97 units per gallon of paint. An increase of 84%!

And, where they formerly got 5.49 dryers per mixed gallon of finish, now—with the Ransburg No. 2 Electrostatic Spray Process—they get 9.56 dryers per gallon of paint. An increase of 74%!

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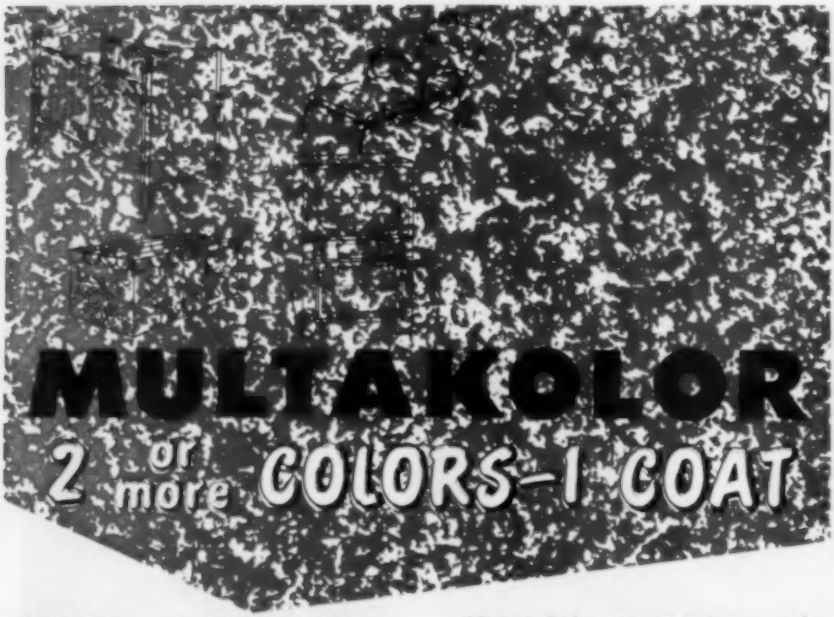
82-52



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Multakolor is economical—one coat gives a textured finish that hides all imperfections in wood, composition materials and metal. Undercoating and sanding in most cases are entirely eliminated. Multakolor does not create an overspray, resulting in a further saving of material and labor. Applied with standard spray equipment—Multakolor air dries in 15 minutes to touch and can be handled in one hour.

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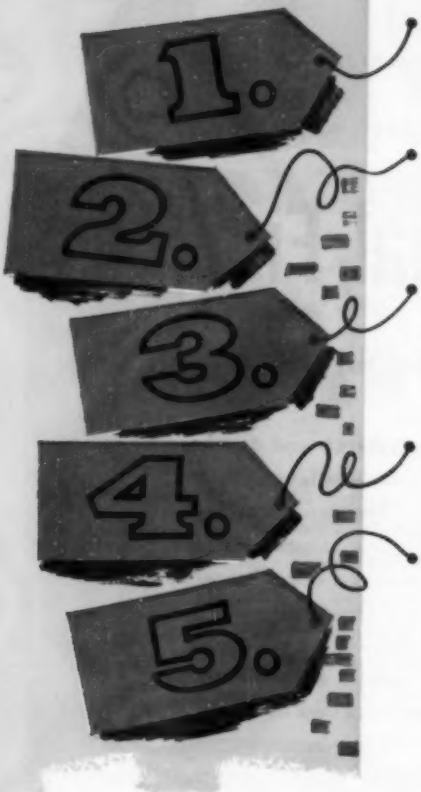

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Gives solutions of exceptionally high solids content—or high diluent content, both aromatic and aliphatic.

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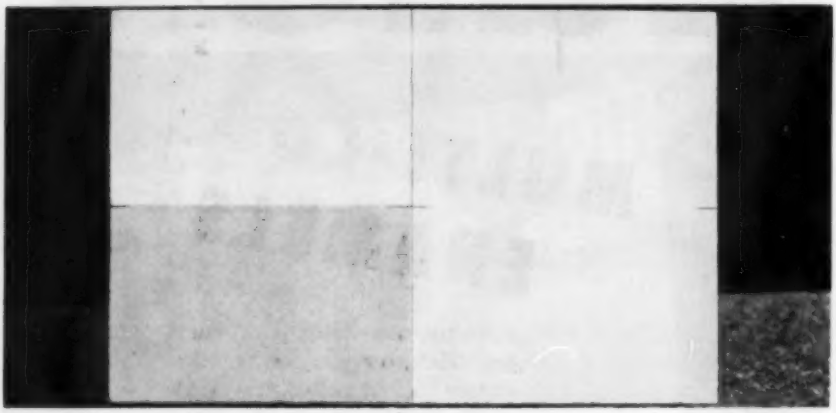

AFFORDS MAXIMUM COLOR RETENTION...by actual test!

The LEFT SIDE of the panel illustrated above was coated with another leading white lacquer, the RIGHT SIDE WITH NCP WHITE LACQUER. For six months the top half of the panel was covered, the bottom half exposed to ordinary indoor light. After the six month period, the area which had been coated with a competitive white lacquer and exposed to light YELLOWED. The area which had been coated with NCP White Lacquer and exposed to light RETAINED its color. If YOU have a discoloration problem, it will pay you to investigate this highly effective formulation.

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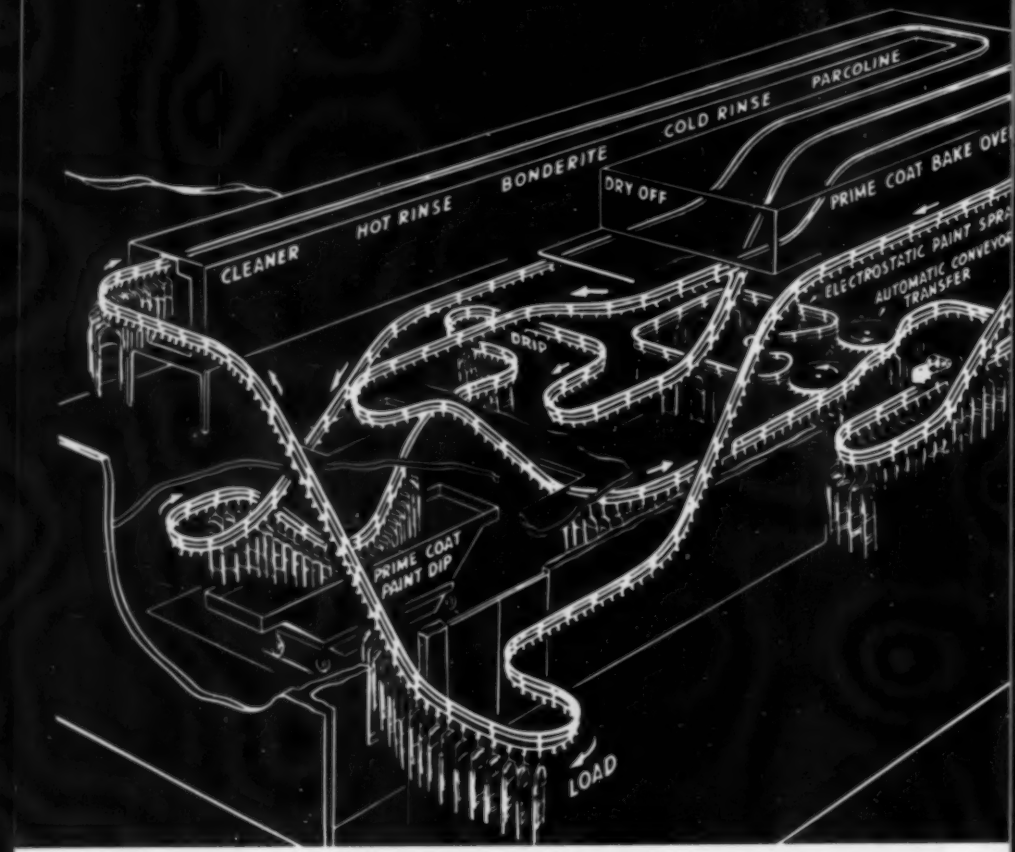
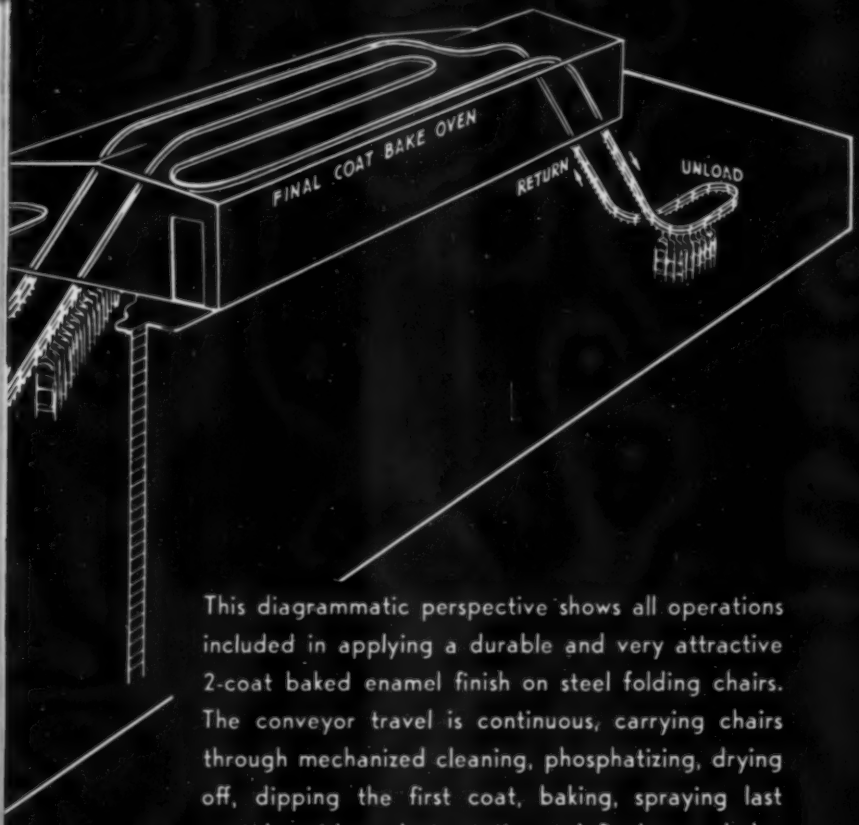


BY CARROLL M. HIGHSTREET
Plant Engineer, American Seating Co.

A Fine Bake Finish on Steel Folding Chairs



This diagrammatic perspective shows all operations included in applying a durable and very attractive 2-coat baked enamel finish on steel folding chairs. The conveyor travel is continuous, carrying chairs through mechanized cleaning, phosphatizing, drying off, dipping the first coat, baking, spraying last coat by airless electrostatic, and final oven bake.

MODERN manufacturing processes produce attractive, smooth, tough, long-lasting finishes. If it were not for modern equipment and materials this would not be possible. Our finishing system on folding chairs is completely automatic. That is to say, from the time the chairs are hung on the conveyor to go through metal cleaning and surface preparation, dry-off, first coat dip, first coat bake, electrostatically applied top coat enamel and final bake—all through a total travel of 944-ft.—no manual handling is required.

Also, in this system, the number of variables that could spoil the consistently uniform finish has been reduced to a bare minimum. In fact

there are only two key points to watch—titration of all solutions in the power washer and the viscosity of first coat and top coat enamels. Everything else, including the oven heat, is mechanically controlled.

We manufacture many products other than folding chairs, therefore only limited space could be allotted to the finishing of these chairs. As a consequence, equipment had to be installed on three levels—the first floor, a balcony between floors, and the final bake oven on the roof of the building. From the diagramatic perspective shown at the beginning of this article, you will get some idea of the study and planning that was required by our organization and by engineers of the company that installed the equipment, to make this system operate efficiently within the space available.

Metal Cleaning, Phosphatizing, First Coat Dip and Bake

In order to present a clear idea of how the system functions, I shall describe the step by step operations. Assembled chairs are hung on the main overhead monorail conveyor, on 8-in. centers. This conveyor is 890-ft. long, and is driven through a variable speed drive at 6½-ft. per minute. Here is what happens in the power washer.

Stage	Solution or Liquid	Degrees F.
1	Alkali Cleaner	165
2	Hot Water Rinse	165
3	Bonderite	155
4	Cold Water Rinse	150
5	Chromic Acid Sol.	210

Then follows about five minutes of travel through the dry-off oven.

Dip Coat; Vapor Tunnel; Flash Off and Bake

The conveyor is loaded on the first floor. Chairs travel up to the second floor for metal cleaning, surface preparation and dry-off. Then they cool for eight minutes as they travel back to the first floor where, by means of a U-dip in the conveyor, they pass through a dip tank of 690-gallons capacity.

The first coat is an alkyd-urea base synthetic enamel. The enamel in this tank is constantly circulated, and it passes through filters on each cycle. An adequate CO^2 system provides protection against fire, and an underground tank is connected to the dip tank by automatic dump valves which, in case of fire, empty the dip tank in a matter of seconds.

As chairs leave the dip tank they travel for seven minutes over drip pans in a metal enclosure wherein a minimum of fume laden air is exhausted. The concentration of solvent vapors in this enclosure aids in draining off excess paint from the chairs, speeds up drainage, prevents runs and fatty edges. Also, practically all of the excess paint is salvaged, since it drains back into the dip tank by gravity. Solvent vapor concentration in this area prevents the enamel from hardening on the drip pans.

After leaving this draining enclosure, chairs travel for seven minutes to permit the first coat to flash (air dry) as they go up to a high-level gas-fired convection oven where the first coat is baked at

34¢ per part may be economical!

12/3¢ per part may be too much!

You may be looking at cleaning department costs and saying: "that looks about right . . . it used to cost us a lot more!" Would you like to know, for sure, that your cleaning costs are just as low as they can be . . . with excellent results?

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Chairs entering 5-stage power washer. Solutions are titrated every hour to maintain proper strength. Equipment for titrating is in right foreground.

They receive their first coat by power dipping, as shown here, where conveyor is moving from right to left. A pump to circulate the paint appears in lower right foreground. The drip pan enclosure shows far at left in the backround.

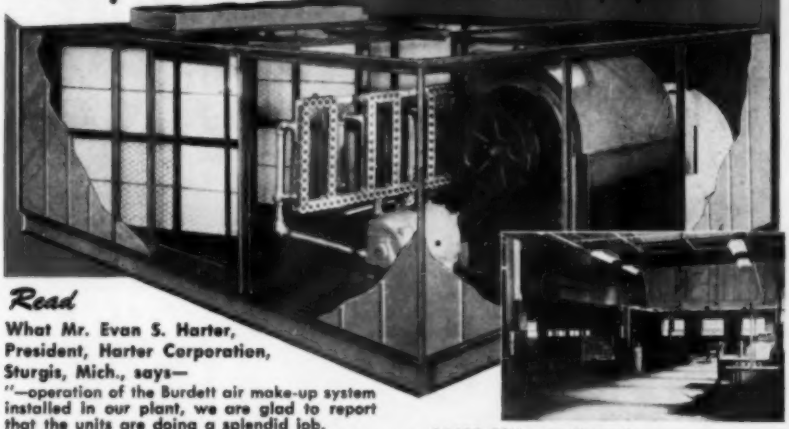
325° F. This oven is between the first and second floors—with make-up air systems, recirculating fans, etc., installed on a balcony.

Airless Electrostatic Application of Enamel

Upon leaving the oven wherein the first coat is baked, the chairs cool for ten minutes as they travel back to the first floor. Here a rotary automatic transfer unit lifts each chair from the main conveyor, turns it 90° and hangs it to the overhead conveyor in the electrostatic booth. This conveyor is 64-ft. long, has hangers spaced on 24-in. centers, and is driven at 19½-ft. per minute. Reason for the 24-in. center spacing of hangers on this

Why Operate in a Costly Vacuum?

When a BURDETT AIR MAKE-UP SYSTEM will eliminate this problem and increase efficiency of men and equipment



Read

What Mr. Evan S. Harter, President, Harter Corporation, Sturgis, Mich., says—

"—operation of the Burdett air make-up system installed in our plant, we are glad to report that the units are doing a splendid job.

"Prior to the installation of the air make-up unit, our plant was under a considerable vacuum that was a source of an endless amount of trouble. This vacuum was created by the many spray booths that we have in our paint finishing department and also by the exhaust system employed in the grinding and buffing department, as well as other exhaust provisions for welding booths, etc.

"By the installation of these air make-up units we are now able to satisfy air replacement requirements in any portion of our plant without affecting other areas or operations. The reason we chose to install several units of different capacities was so that we could satisfy our exact exhaust requirement regardless of the amount of equipment that was in operation.

"Since the installation of these air make-up units:

1. All exhaust systems are functioning satisfactorily and efficiently.
2. The spray booths and polishing lathes are working more efficiently because of sufficient volume of air in the building.

- *25,000 CFM capacity unit*
- *Automatic temperature control with outside temperature variation from —10° F. to +80° F.*
- *Complete with fans, motors, operating equipment, filters and controls.*

3. The lack of vacuum in the building has made it possible for people to work in comfort and without draft along windows and walls.
4. Doors of the building can be opened and closed by employees or automatic door openers without danger to employees or the necessity of frequent repairs of doors or door frames.
5. We have been able to maintain an even distribution of dampness in the different areas that were previously affected.

"The air make-up units have supplied the proper volume of fresh and heated air to the closely controlled temperature necessary to maintain the operation in each phase of production."

(Signed) Evan S. Harter
President

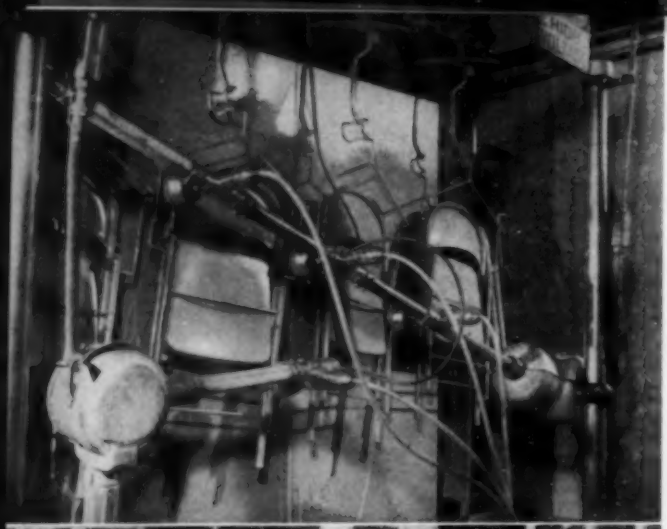
There's a capacity to suit your purpose — ask about it!

BURDETT
MANUFACTURING COMPANY

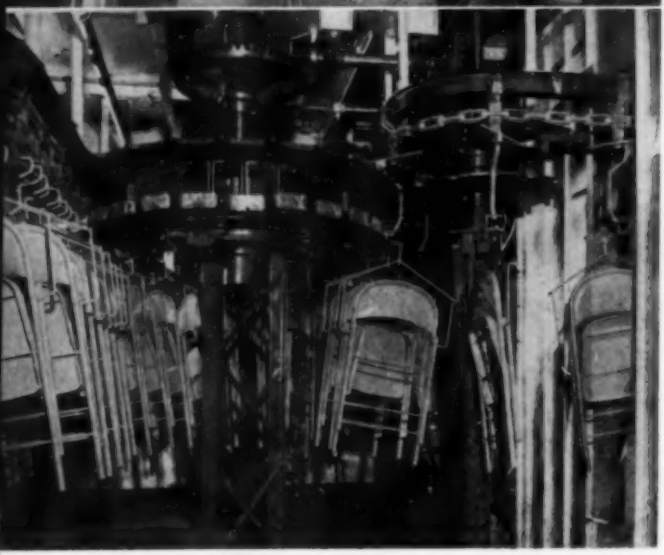
3425 West Madison Street, Chicago 24, Illinois

DETROIT PHILADELPHIA NEW YORK CLEVELAND DALLAS

Also Manufacturers of "Radiant Heat" Systems, Ovens, Heaters, Air Make-Up Units, Spray Booths and Washers.



This airless electrostatic unit (Process No. 2) applies the final coat of paint to backs of folding chairs.



An automatic transfer unit changes the position of all chairs, setting them edge to edge while they travel through the electrostatic spray booth. The main line conveyor appears at left; the electrostatic booth conveyor is at right. After being sprayed, the chairs are automatically returned to the main line conveyor and repositioned as before.

conveyor is that chairs travel in a plane parallel to the conveyor travel.

Chairs pass through two No. 2 electrostatic application stations—one to coat their front surfaces and the other to coat their back surfaces. In each station, chairs pass through a high voltage electrostatic field wherein the paint particles are "charged" as the paint leaves the revolving heads. No compressed air is used to atomize the enamel; enamel is atomized as it leaves the three revolving heads at each station. The upper head is 2-in. in diameter, the center head, 6-in. in diameter and the lowest head is 3-in. in dia. This arrangement of spray heads is due to the surfaces of chairs to be coated. [*To page 26*]

STRIPPING ENAMEL . . .

SAVING TIME

Enthonics AT WORK

25 seconds from immersion to completed stripping!

That's the fast, dramatic story of ENTHONE Enamel Stripper S-18 in action — another example of *Enthonics* at work.

Enthone Enamel Stripper S-18 is the modern organic stripper developed for removing the newest organic finishes such as Epon or Epoxy coatings and many synthetic enamels from copper, copper alloys, steel and aluminum.

For the right strippers to solve your organic stripping problems fill out a questionnaire we'll send at your request; return it with typical samples of your work. Enthonics will find the answer . . . without obligation!

And ask for your copy of the "Enthone Check List" of literature covering more than 60 products and processes developed for modern electroplating and metal finishing.

ENTHONE INCORPORATED

442 Elm Street, New Haven 11, Connecticut

Representatives and Stock Points

Binghamton, N.Y.-Chicago-Cleveland-Dallas-Los Angeles

Transfer After Top Coat; Flash-off; Bake; Cool

As chairs emerge from the electrostatic booth, another rotary automatic transfer unit picks them up, one at a time, turns them 90° and hangs them on the main conveyor to move in a plane at right angles to the conveyor travel. Chairs travel for eight minutes to allow suitable flash time for the top coat enamel before they reach the final bake oven on the roof of the building. In this directly fired gas convection oven the finish is baked at 325° F. Chairs cool for ten minutes as they travel back to the first floor unloading station.

The company's reason for selecting and installing the equipment illustrated and described in this article was to obtain the quality of finish demanded by specifications. Dipping the first coat takes care of coating the entire chair—even the inside surfaces of the tubular frame. Electrostatic application of the top coat enamel produces a better appearance and reinforces those areas which will receive the greatest wear in handling. By "reinforcing" I understand that in electrostatic application the high surfaces receive a slightly heavier coating of paint than the lower surfaces. Thus the slightly heavier coating is put on where it will be most needed.

Acknowledgment: Valuable help in the preparation of this article was supplied by Newcomb-Detroit Co. and Ransburg Electro-Coating Corporation.

"Jim" Hedger New National Sales Manager for Binks

B. J. "Jim" Hedger has been appointed National Sales Manager of the Industrial Division of Binks Manufacturing Company, 3116-40 Carroll Avenue, Chicago 12, Illinois. He was formerly Binks District Sales Manager.

The Industrial Division produces spray painting booths, air supply and exhaust systems and all engineered installation of spray painting equipment.

Mr. Hedger joined the sales staff of the Binks Company in 1928. In 1937 he became Mid-West Divisional Sales Manager, and in 1940 was promoted to Chicago District Sales Manager. Mr. Hedger also served as Manager of the company's Ceramic Division from 1940 to 1949.

During World War II, Mr. Hedger worked closely with leading aircraft manufacturers in California on the design and installation of spray painting departments. Since that time he has worked closely with several major industries in the development of streamlined finishing methods.

Peloubet Of Dow Chemical Returns To Midland

John A. Peloubet, formerly of the magnesium sales section of the Dow Chemical Company's New York office, has returned to Midland, Michigan, to rejoin the Magnesium Department Technical Service and Development group. Because of wide previous experience in safety and insurance problems, he will now devote full time to these fields as applied to magnesium.

Mr. Peloubet joined Dow in 1936 and has been continuously associated with the magnesium department in laboratory developments and technical service capacities, the last six years as a technical representative in the New York sales office.

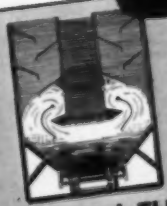
Now more than ever

PLANT ENGINEERS PREFER

Schmieg CENTRI MERGE INDUSTRIAL EQUIPMENT for

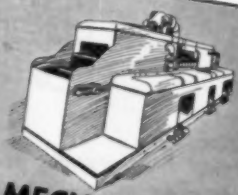
- ✓ Long, Trouble-free Performance
- ✓ Low Maintenance Costs
- ✓ Ease of Installation
- ✓ Space-saving Economy

GET THE FACTS about SCHMIEG Equipment Before you Decide:

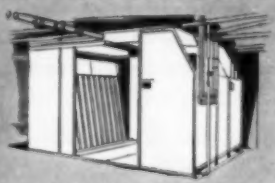


DUST and FUME ELIMINATORS

INDUSTRIAL OVENS



MECHANICAL WASHERS



SPRAY BOOTHS

THE best AIR PURGE is CENTRI MERGE

All SCHMIEG equipment is designed, engineered, manufactured, and installed with the fundamental objective of protecting and improving the quality of the product you manufacture.

CONSULT SCHMIEG ENGINEERS and find out how a SCHMIEG installation will keep your plant operating at highest efficiency levels at lowest possible cost.

Schmieg INDUSTRIES INC.

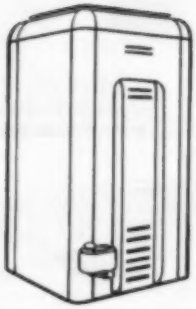
Engineers & Manufacturers

P. O. BOX 4701 • DETROIT 34, MICH.

Speed your production as this

with new DUOTONE

by Lowe Brothers



A large manufacturer of theater seats wanted to step-up production of seat backs by eliminating back-tracking and double-handling in the finishing process. Lowe Brothers "Finishing Specialists" developed an amazingly fast spraying, solid covering (one coat!), quick setting enamel for his product. Besides greatly speeding the flow of finished parts, this sensational new finish—*Duotone Enamel*—provided the best looking, longest wearing, most economical finish this manufacturer had ever used!

New *Duotone* Enamel is the ideal finish for a broad range of sheet metal products. It gives maximum beauty and wearability, yet keeps finishing costs at a minimum! ⇨ ⇨ ⇨

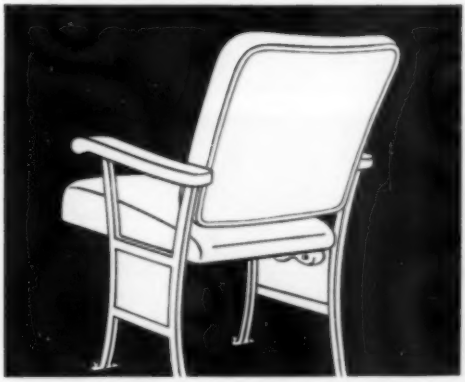
This advertisement is based on facts from Lowe Brothers Case History files.

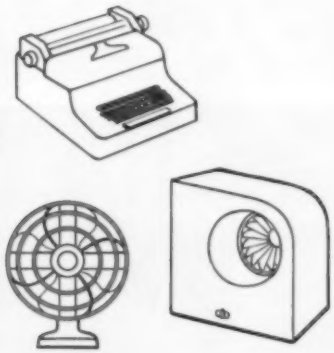
ENGINEERED QUALITY

manufacturer did...

ENAMEL

Extremely fast baking! Amazingly tough!





Check these important Duotone Enamel features • Dries in 15 minutes at 300° in a conventional oven—and in 8 minutes under infra-red! No orange peel! • Available in any degree of gloss—wide color choice. • It's a modified alkyd resin type enamel. • Sets a new standard for wearability! Practically impossible to mar or scratch! • Resists perspiration and skin oils. • *Duotone* keeps material cost to a minimum! Just one coat (only ½ mil thick) covers bare metal surfaces perfectly with an adequate protective film . . . *Duotone may save you plenty in 1955! You pay nothing to find out. Write today for the full story.*

The Lowe Brothers Company • Dayton 2, Ohio • Industrial Division

District Offices: Atlanta • Boston • Dallas
Chicago • Jersey City • Kansas City

LOWE Brothers

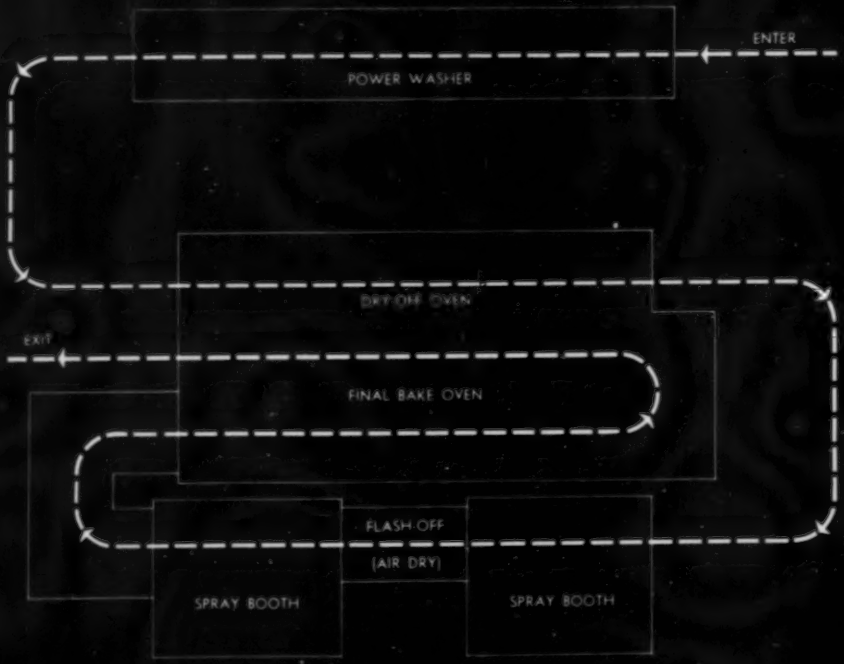
FINISHES FOR INDUSTRY SINCE 1870

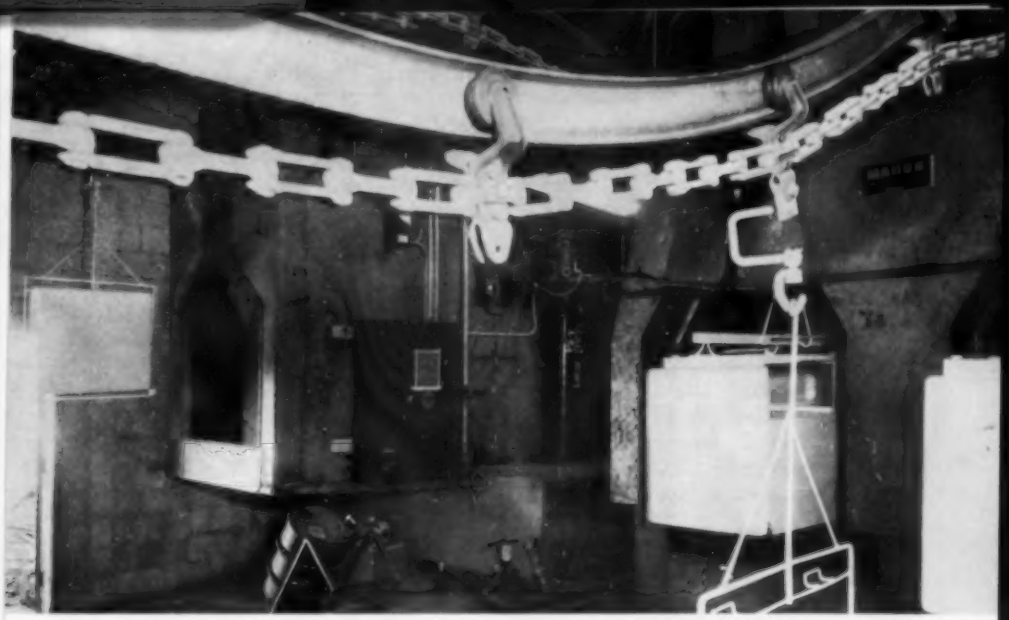
Finishing Food Freezers

BY F. W. BEASECKER
Plant Manager, Orley Brothers Co., Inc.

COMPACTNESS without overcrowding is a real asset in any manufacturing process. Also it is generally economical. An example of this is shown in our conveyorized finishing room. In the relatively small space of 49x52-ft., sufficient equipment is installed to adequately finish food freezers and refrigerators. To accomplish this the finishing engineers combined the dry-off and final bake ovens. I shall explain this later.

The entire finishing room is pressurized; that is 30,000-cu. ft. per minute of fresh outside air is





At left, the exit end of power washer. Next is entrance to dry-off oven. Opening at right exit end of final bake oven. Entrance to final bake oven is not shown in this picture. Photograph, courtesy of the R. C. Mahon Company.

filtered and drawn into the room by fans. Exhaust fans remove 20,000-cu. ft. of air per minute. The excess 10,000-cut. ft. of filtered air pressurizes the inside of the room and prevents any dust or flying particles from entering through doors, windows or any other openings to settle on freshly coated work.

Close proximity to the fabricating department prevents us from using any inside air. Of course, during the cold months of the year the incoming air passes through heaters before it is filtered and released into the finishing room.

Metal Cleaning and Surface Conditioning Before Painting

The finishing conveyor is an overhead monorail with hangers spaced on 32-in. centers. This conveyor is driven through a variable speed drive at 6-ft. per minute. Food freezer cabinets and component parts are loaded on the conveyor in the fabricating department.

When parts arrive in the finishing room they enter a power washer. In the first stage an alkali cleaner is sprayed from four sides of the washer at 25-lbs. pressure. The solution temperature is 185° F. This is followed by a hot water rinse, the temperature of which is also 185° F. Finally the work receives a spray of mild chromic-phosphoric solution at 165° F. Cabinets and parts are blown with compressed air as they leave the washer to remove all traces of moisture from seams and inside

corners before they enter and pass through the dry-off oven for a drying period of five minutes at 380° F.

Dry-Off Oven; Cool; Two Hot Spray Coats

To conserve space in the finishing room, the dry-off and final bake oven are one and the same. There are no partitions, baffles or air seals separating the two sections. The dry-off section of the oven is kept at 380° F. by means of thermostatic controls. The final bake section is also thermostatically controlled to maintain a temperature of 300° F. Air seals are located at both conveyor entrance and exit openings to prevent the escape of heat into the finishing room.

This is the second top enamel coat spray booth, with the tunnel connecting both booths in the background. Both booths are well lighted by fluorescent safety lights. Photo, courtesy of R. C. Mahon Company.

Cabinets and parts travel for five minutes to cool before they reach the spray booths. We have two 16-ft. water curtain spray booths connected by a tunnel 4-ft. wide. In the first booth, two operators apply an alkyd-resin-base white synthetic enamel, using an atomizing pressure of 50-lbs., and fluid pressure of 20-lbs. The first coat flashes [air dries] for about three minutes as the parts pass through the tunnel. In the second spray booth an operator sprays a second wet coat of the same enamel.

Paint Heaters Control Viscosity; Build Film

Paint heaters, through which paint is heated and circulated, are installed in both spray booths. These heaters are thermostatically controlled at 145° F. The length of the material hose is 8-ft. between the paint heater and the spray gun, therefore it is safe to assume that the paint temperature leaves the gun at a heat of about 137° F. Due to hot application of a double wet coat of enamel, we obtain a dry film thickness of about 2 mils.

As cabinets and parts leave the second spray booth, a flash period of four minutes is allowed before they enter the indirect gas fired convection oven where the finish is baked for 18 minutes at 300° F. Upon leaving the oven the painted parts remain on the conveyor to cool as they travel to the insulating and assembly lines.

AMAZING NEW SOLVENT

☆ no fire hazard
☆ extremely low toxicity
☆ safe for most metals
☆ extra-high solvency

CHLOROTHENE

(1,1,1-thricloroethane, inhibited)

A product of Dow Chemical and certainly the finest cold cleaning solvent yet produced. Fully the equal of carbon tetrachloride in cleaning power and drying time yet no more toxic than the petroleum naphthas*. No flash point—no fire point—and relatively safe for cold cleaning of the common metals including aluminum.

*M.A.C. 500 ppm

FOR SAFER—FASTER—BETTER CLEANING write or phone the nearest stock point.

THE SOLVENTS and CHEMICALS GROUP

2540 WEST FLOURNOY STREET, CHICAGO 12, ILLINOIS

AMSCO SOLVENTS & CHEMICALS CO.—CINCINNATI 29—4619 Reading Road—MElrose 1910.

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WOLVERINE SOLVENTS & CHEMICALS COMPANY—GRAND RAPIDS—1500 Century Ave., S.W.—Grand Rapids 5-9111.

Bulky Metal Products Present Finishing Problems

THE FINISHING of large, bulky metal products presents far different problems than is encountered in finishing rather small light weight pieces. The volume of production is necessarily less than in small products, hence a continuous finishing system is not generally required.

Take for example, a wing assembly for aircraft or other sub-assemblies of similar size and weight. These pieces are relatively heavy and cumbersome to handle. Often, masking must be done before finishing. Because of the nature of the piece, this is generally done while it is suspended from an overhead conveyor. This eliminates a completely power-driven conveyor. Added to this, is the application of decals, stencils and perhaps silk screening of identification data, all of which is performed while the piece is suspended on the conveyor. Because of these operations and intermittent finishing of these pieces, power driven conveyors are not usually employed.

One method of conserving time, space and effort is to install a combination downdraft, water-wash spray booth and a power-driven, portable infrared electric oven in the same enclosure.

A piece may be spray coated, then manually moved forward about 12 to 15-ft., following which the infrared electric oven is turned on. The oven, mounted on ballbearing wheels which operate on a track

"Hydrin" protects highly finished parts like these, after water rinses, between operations.*

Amazing New Chemical Treatment Prevents Rust Without Oil

Newly-developed "Hydrin," dissolved in water, chemically prevents rust during in-plant operations . . . during and after rinsing . . . prior to painting or packaging. No oiling is necessary. Surfaces may be painted or further rustproofed following the "Hydrin" treatment. "Hydrin" is also especially desirable for inhibiting water used for hydrostatic testing of pumps, tanks, radiators, etc. "Hydrin" will provide interim protection for metal surfaces at a cost of only pennies per gallon.

Write for complete information about "Hydrin." Address Rust Prevention Engineering Service, Nox-Rust, Department IF-15, 333 North Michigan Avenue, Chicago 1, Ill.

**Pat. applied for*

America's Leading Manufacturer of Scientific Rust-Preventive Products

DAUBERT CHEMICAL COMPANY

333 North Michigan Avenue, Chicago 1, Illinois

Offices in Principal Cities

in the concrete floor, travels forward and backward for 3 to 6 minutes with a slow reciprocating motion to force dry the finish just applied. When dry, the oven is turned off, and the piece is moved back over the floor grating of the spray section of the enclosure. Here it is allowed to cool for 10 to 20 minutes, and is then ready for a second coat, or spraying through stencils, silk screening of instruction data, etc.

The speed, as well as the distance the oven travels, is adjustable to accommodate any desired force dry or bake period, and the length of the piece. This arrangement makes it possible to coat and dry or bake the finish with speed and convenience. Space is saved by eliminating a batch-type convection oven or a full length infrared electric oven. The portable oven is only about 6-ft. in length and high enough to accommodate the widest piece when suspended horizontally on the conveyor.

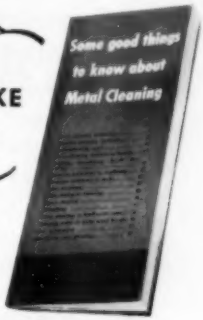
Devoe & Raynolds Executive Offices Moved to Louisville

William C. Dabney, president of Devoe & Raynolds Co., Inc., has announced the removal of the executive offices of DeVoe & Raynolds from New York City to Louisville, Ky. Mr. Dabney says that a thorough survey proved that concentrating the executive offices in Louisville, where Devoe operates two large plants and maintains Research and Development headquarters for the entire company, would effect substantial savings and greatly increase operating efficiencies.

Devoe & Raynolds will occupy the first floor of the Columbia Building at Fourth and Main St., Louisville, and the Eastern District Sales Office, Eastern District Credit Office and Eastern District Order and Billing Office will remain in New York City. Approximately fifty executives and supervisory people will move from New York to Louisville, and approximately 150 people will be employed in the Louisville area to staff these new offices.

Announcement has also been made of the election of Doran S. Weinstein as executive vice president and assistant to the president of Devoe & Raynolds Co. Mr. Weinstein, who resigned recently as Executive Vice President of Capital Transit Co. of Washington, D. C., will make his headquarters in Louisville.

WHICH JOB WOULD YOU LIKE TO IMPROVE?



Listed below are some jobs discussed in Oakite's 44-page illustrated booklet on Metal Cleaning. Let us help you do them with better results, greater economy.

OAKITE PRODUCTS, INC.
32F Thames St., New York 6, N. Y.

Tell me about Oakite methods and materials for the following jobs:

- ☐ Tank cleaning
- ☐ Pickling
- ☐ Machine cleaning
- ☐ Burnishing
- ☐ Electrocleaning
- ☐ CrysCoat pre-paint treatment
- ☐ Paint stripping
- ☐ Steam-detergent cleaning
- ☐ Barrel cleaning
- ☐ Rust prevention
- ☐ Send me a FREE copy of *"Some good things to know about Metal Cleaning."*

NAME_____

COMPANY_____

ADDRESS_____

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE

Technical Service Representatives Located in Principal Cities of United States and Canada

Type of Conveyor Most Suitable

RECENTLY, I visited a plant on service call. After completing my work, the plant manager took me through the finishing room on our way back to the office. He stopped to explain that they planned to make some changes, the most important being the installation of a conveyor. Next, he showed me a power-driven, horizontal, metal belt conveyor he had designed to carry sub-assemblies to the assembly line. It was intermittently operated. When an operator finished with a sub-assembly, he placed it on the belt and started the conveyor with a foot pedal. Each of the four assemblies in this group could start or stop the conveyor.

This conveyor apparently gave complete satisfaction in delivering the rather elongated sub-assemblies to the line for final assembly. As the plant manager had designed it, it was of course, his pet idea. He considered duplicating it for use as a finishing conveyor. But this horizontal metal belt, operating in a metal trough with 2½-in. high sides, was definitely not suited to the finishing of his product. If they continued the present method of spray coating the parts, the belt would mar the wet finish. If they changed over as he indicated, to either dip or flow coating, this type of conveyor would certainly not be suitable, because of drainage of the paint off the product, and the problem of cleaning paint

tough stripping problems?

USE **ECONOSTRIP**

The New Low Cost Paint Stripper

REMOVES THOSE SO-CALLED "IMPOSSIBLE-TO-STRIP" FINISHES IN A MATTER OF SECONDS

- **Remarkably effective for removing EPONS, Enamels and Lacquers.**
- **Will not harm aluminum and other soft metals.**
- **Will not remove phosphate coatings.**
- **Easy to use in dip tank or in conveyorized stripping systems.**
- **Economical because it is low in cost—lasts longer—does more jobs per gallon.**
- **Recommended by leading finish manufacturers.**

For individual needs Beck Laboratory facilities are available for formulating custom made strippers. Write today for detailed information.

SEND FOR FREE BULLETIN

BECK EQUIPMENT COMPANY

Custom Made Strippers For Every Need

3350 WEST 137th STREET • CLEVELAND II, OHIO

off the belt and the metal trough through which it operated.

Of course, he did not ask my opinion as my business is ovens, but it just occurred to me that pet ideas or pet theories could sometimes prove very costly.—*C.B.P.*

Metals Disintegrating Appoints Bradley as Presidential Assistant

The appointment of D. Cameron Bradley as assistant to the president has just been announced by H. E. Hall, president of Metals Disintegrating Co., Inc., Elizabeth, N. J., manufacturers of metal powders, metal pigments, metal abrasives, pulverizers and dust - collecting equipment.

Mr. Bradley attended Lehigh University. He has had an extensive experience in the metal field. In his new position, Mr. Bradley will assume administrative and executive duties.

DeVilbiss To Participate In College Training Program

Irvin B. Thomas, instructor in the DeVilbiss Co., spray painting school, Toledo, Ohio, has been named to a committee for the formulation of a questionnaire which will be a forerunner of recognizing industrial schools for college credit.

At a recent meeting of industry, representatives at Wayne University, Detroit, Mich., A. D. Althouse of the Detroit Public Schools, pointed out that a 40-hour week in an industry school may be equivalent to one university credit hour.

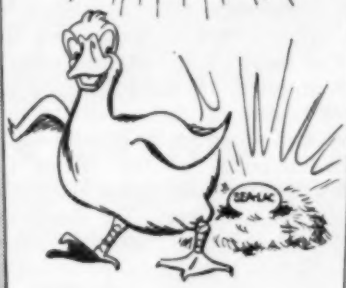
The DeVilbiss spray painting school, which has been operating for more than 25 years, has trained thousands in the correct usage, care and handling spray painting equipment and the correct technique of spray painting.

In the past, school sessions have been devoted to furthering the training of vocational teachers, but this is the first attempt to provide college credit for teachers completing the course.

The present plan is to have the teachers attend regular sessions of the school so they can obtain first hand information about the problems encountered in the field by the man on the job.

READY-MIXED

GOLD



SEA-LAC

HAS IT!

Avoid fuss and muss of mixing bronze powder in — we have all shades of bronze powder ready-mixed in vehicle. Spray or dip — SEA-LAC ready-mixed gold is right for aluminum, steel, cast iron, polystyrene, acrylic and other plastics. It can be air-dried or baked; and has good package stability. In clear too, if desired, to incorporate your own powders.

DURALAC CHEMICAL CORP.
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Make Nameplates Faster In New Factory

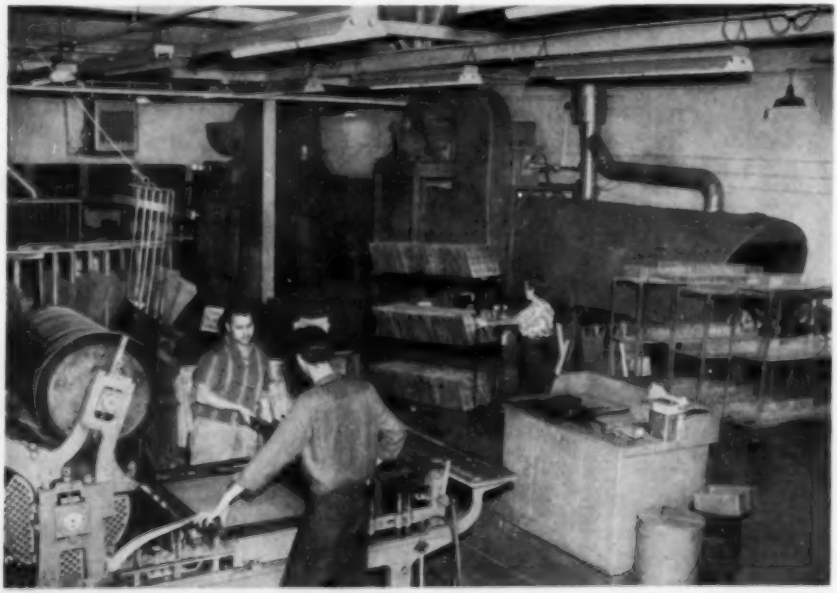
"CREATE the shortest possible distance between processing departments."

This directive from executives of the Miller Dial & Nameplate Co. of California was the measuring stick applied to every step in the development of plans for its new plant and office in El Monte, Calif.

The urgency of the Miller Co. directive stemmed from the experience the company had been undergoing for the past five years. Rapid growth had so over-taxed its facilities and had so tangled the flow routes of materials going through the old plant, that the need for correct flow planning became of concern to management.

Plant Laid Out for Rapid Transfer of Work in Process

The slightly rectangular shape of the new one-story plant, with truck docks located on one of the longer sides and at dead center of the perimeter of processing activity, indicates the thoroughness with which the planning directive was followed. [*To page 40*]



Printing in foreground, at left; portable metal racks and a 56-ft. baking oven in background.

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Degreaser where metal sheets are cleaned.

Because the Miller Co. is principally in the business of printing on sheet metal or plastic, practically no stock of raw materials is kept on hand, therefore a comparatively small storage or staging area has been provided next to the docks. All materials in the plant belong to customers; they are in the plant for printing and are routed through and shipped out again as quickly as possible.

A half-ton underhung electric crane, with a transfer monorail system, passes the sheet plastic or metal stock from truck beds across the dock, around the corner and onto the storage floor.

A second purpose served by the overhead crane in the storage room is the transfer of metallic sheets from their stacks to the shear where they are cut to size. Still in the same room, the material is buffed, degreased, and racked onto "A" frame trucks for delivery to the printing department.

Meanwhile the design to be imprinted on the metal or plastic has been received by the printing department. This is photographed, reduced to size, negatives and positives are made, and the resulting reproduction material is sent to the second dark room (still in the same department) where lithographic composed press plates are made. All reproduction materials within the printing department are handled by hand, and all preparation of this material is accomplished within the one room.

A 56-ft. baking oven in the next room completes the printing process; an "A" truck moves work to the punch press department.

If the work is to be etched before being punch-pressed, a short stop-over at the etching room is made. From there the material is trucked to the paint room adjacent to the etching department, where the colors are sprayed and baked.

The work is then moved to the punch-press department. Blanking to the size and shape required follows. The finished products are inspected and packed for shipment or local delivery.

The entire operation is characterized by movements of never over a few feet between each of as many as 30 separate processes. Not all work is sent through all processes, but the new centralized location of the shipping room and the easy access from there to all departments allows the material to be smoothly routed through the plant regardless of the number or order of processes required.

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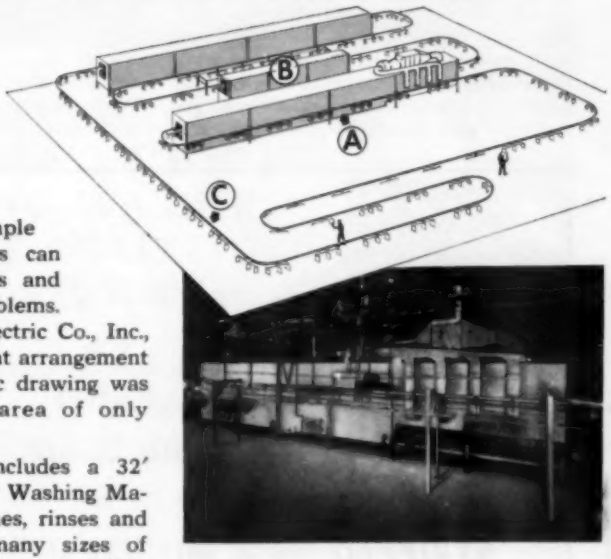

HERE'S just one example of how A-F Engineers can solve *your* metal parts and products cleaning problems. At The Wadsworth Electric Co., Inc., the compact and efficient arrangement shown in the schematic drawing was installed in a floor area of only 50′ x 50′.

This arrangement includes a 32′ especially designed A-F Washing Machine ***(A)***, which washes, rinses and dries the company's many sizes of products; the automatic paint dipping unit ***(B)*** and the 384′ A-F Engineered Overhead Trolley Conveyor System ***(C)***, which combines all of the operations into an "endless stream" production. This new A-F "cleaning package" reduced the complete finishing cycle from 1 hour and 40 minutes to 40 minutes; and by *thorough* cleaning, greatly improved the quality of the products.

Before *you* consider any method of cleaning your metal parts and products investigate the wider experience of Alvey-Ferguson, serving all types of industry since 1901.

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Get the Exact Aluminum Look You Want

LAYMEN HAVE been familiar with aluminum finishes for a number of years. Many of them, however, including those who use aluminum coatings, are not aware of the variations in appearance which is possible with these finishes. Aluminum has certain desirable properties, such as heat resistance and moisture proofness, and aluminum finishes are often used for protective purposes. Also used for decorative purposes, it is well for the user of industrial finishes to know just how appearances can vary.

Aluminum finishes generally contain either leafing or non-leafing aluminum pastes or powders. The leafing grade of aluminum floats to the surface when the coating is applied. The coating is more brilliant in appearance than a coating containing non-leafing aluminum, which is scattered through the film. Coatings containing leafing aluminum tend to "crock" or smudge or rub off much more than those with the non-leafing grade. The latter type of aluminum is often used with other colors in polychromatic and hammer finishes.

The size of the aluminum particles in a paste or powder largely determines the appearance it will impart to a finish. The larger particle size pastes and powders are generally whiter, rougher, and have more glitter than the finer particle size materials which are darker and bluer, smoother have more hiding, and are more expensive.

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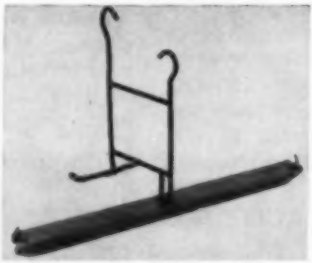

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Non-leafing aluminums vary considerably, but there is a greater variation in the appearance of the leafing types. The appearance of an aluminum coating may be rough and glittering, or silvery white. It may have a burnished silver look, or have a "mirror-like" finish. Some aluminums give the finish a look approaching that of chrome plate. Others give appearances described as matte-like, satiny, diffused texture, or silvery gray.

The man who uses aluminum finishes for decorative purposes should decide just what look he wants, and not settle for just any aluminum finish.—*Eugene V. Goldstein.*

Automatic Factory. The factory of the future—in which the workman's main job will be to watch over almost entirely automatic machines—moved closer to reality with disclosures by seven scientists of Westinghouse Electric Corp. in the fields of transistors and silicon rectifiers.

Speaking at the summer general meeting of the American Institute of Electrical Engineers, Los Angles, Calif., June 21-25, the scientists told of developments which "will produce significant changes in virtually every major industry in the country."

U. S. Hoffman Corp. Sells Hygrade Atlas Products

The United States Hoffman Machinery Corp. has acquired exclusive representation for all Hygrade Atlas Inc., products. The new enterprise will be known as the Hygrade Metal Finishing Division.

The company is now in a position to offer a new line of metal cleaning, rust proofing and paint bonding equipment, as well as dry ovens, electrostatic painting equipment, paint spray booths and bake ovens.

All inquiries should be sent to the U. S. Hoffman Machinery Corp., 105 Fourth Ave., New York, N. Y. In Canada, to Canadian Hoffman Machinery Co., Ltd., Charles St., Newmarket, Ontario.

Automatically Painting Rocket Motor Bodies

BY E. W. MARCHAND
Vice President of Evans Products Co.

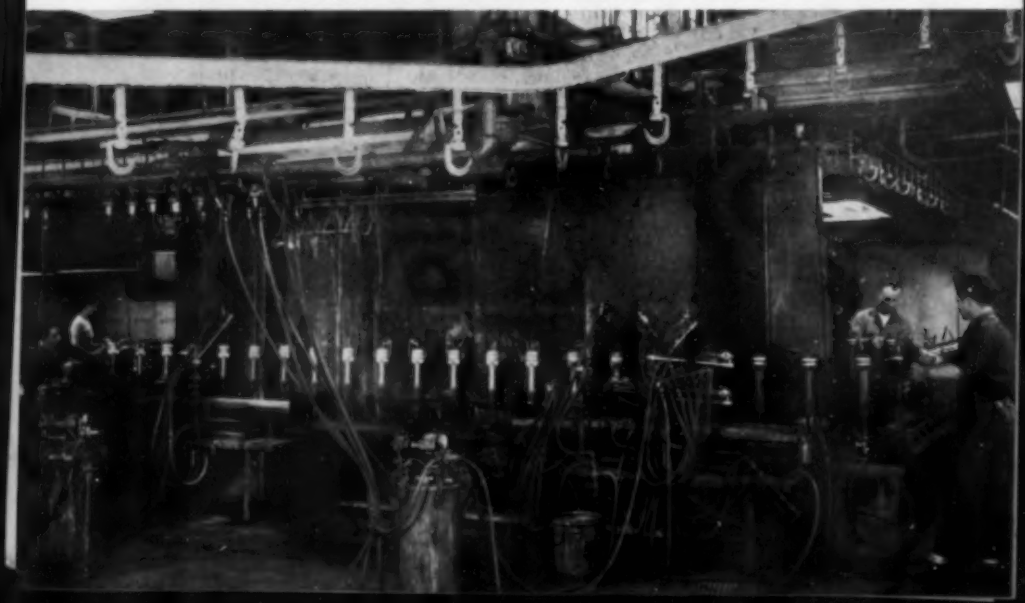
THE ROCKET MOTOR body is really a cylindrical shaped container for the propellant used in a 3.5 bazooka rocket; it is attached to the tail fin assembly. These relatively small, but eventually powerful devices require a strictly specification finish. They must be coated inside and outside, but a certain small area on the outside, at the top end where the body is loaded, must remain unpainted.

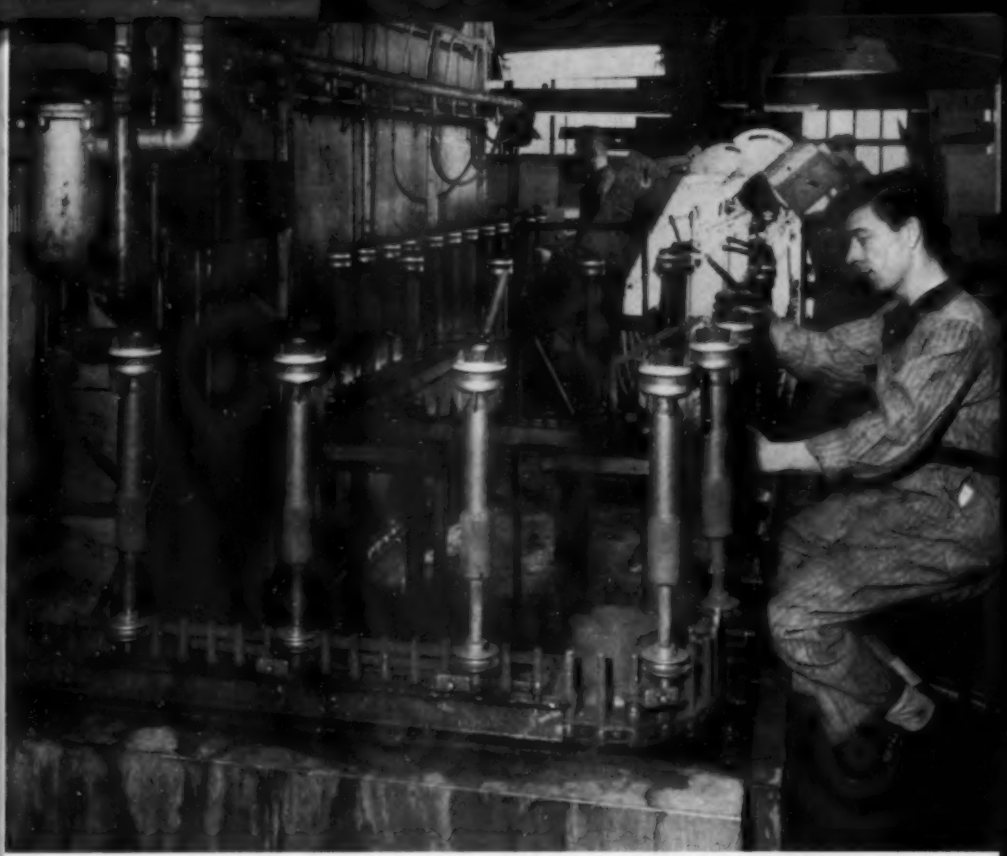
With these finish requirements, mass production finishing of rocket motor bodies calls for the skilled use of modern precision equipment.

Cleaned and Surface Treated Efficiently by Immersion

Because of the specified rustproofing requirements, rocket motor bodies do not go through a power washer; they receive their surface treatment by immersion in a series of tanks. First, all rocket motor bodies go through a trichlorethylene vapor degreaser to remove every trace of the light oil used in

The automatic spray painting machine. Masks are put on parts at left and removed at right.





As cylindrical shaped parts pass this station they are stencil sprayed for identification.

connection with the fabricating operations. Then they are placed in wire baskets and immersed in an inhibited phosphoric acid solution for ten minutes at 110° F. A cold water rinse follows. The bodies are then immersed in a rustproofing solution for five minutes at 180° F. Again a cold water rinse follows. Finally they are immersed in a mild chromic acid solution for one minute at 180° F. and dried by air blast.

The next operation consists of coating the inside surfaces of every motor body with a specially formulated clear lacquer which contains a green dye. This lacquer is used at a viscosity of 20 seconds at 78° F., as measured in a No. 4 Ford cup.

To coat the inside surface, the motor body is held in a vertical position with a jig clamp, as shown in one of the illustrations. This hinged clamp carries a 360° flow nozzle down into the cylindrical shaped motor body. Special lacquer is flowed over the inside surface under air pressure. An accurately gauged quantity of lacquer is released each time the holder clamp

With this device the inside of cylindrical shaped parts are completely and uniformly flow coated with green tinted lacquer.

is lowered. This quantity is just enough to coat the inside surface of the motor body.

After their inside surfaces have been coated the motor bodies are returned to the racks. Next the tail fin assemblies are attached to the motor bodies and the loaded racks proceed to a masking station which is near the automatic spray-bake machine.

Precision Metal Masks Shield Certain Area from Paint Spray

Before further painting or finishing can proceed, precision metal masks must be clamped on the tail fin assembly of each motor body to protect certain areas against paint. These masks are used over and over again. As painted motor bodies leave the second spray station on the automatic spray machine, the precision metal masks are removed and placed in a mask washer.

Every part of the mask is thoroughly washed free of all paint in 60 to 90 seconds by the turbulence of the churning solvent. Upon removal, the masks dry quickly as they are returned to the masking station.

Automatic Spraying Followed By Infrared Baking

The automatic spray machine is of the vertical spindle type. The conveyor chain, traveling horizontally, operates through a variable-speed drive; it is usually set to travel at a speed of 10½-ft. per minute. Spindles are spaced on 12-in. centers. For painting rocket motor bodies and tail fin assemblies, we use two spray stations and two infrared electric ovens.

Motor bodies are loaded on the spindles with the tail fin assembly at the top. As they pass through the first spray station, two fixed spray guns apply zinc chromate primer to the tail fin assemblies only. As they move through the spray zone, the spindles are rotated mechanically at 100-r.p.m.

Within two minutes the zinc chromate is practically dry—before the units reach the second spray station. Here eight fixed spray guns apply an OD [olive drab] synthetic enamel. This enamel is used at a viscosity of 22 seconds at 78° F. as measured in a No. 4 Ford cup. The atomizing pressure is 60-lbs.; fluid pressure is 10-lbs. In this spray zone the spindles are mechanically rotated at 100-r.p.m.

The enamel coat is allowed three minutes flash [air drying] time before the motor bodies enter an infrared electric tunnel where the

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finish is cured for two minutes at 300° F. In this oven radiant heat is directed principally on the tail fin assemblies of the motor bodies, as this part has received a prime coat as well as a top coat of enamel. After traveling about two minutes, the motor bodies enter a second infrared electric oven where the finish on the entire motor body and tail fin assembly is baked for two minutes at 300° F.

Stencil Sprayed Characters For Identification

The motor bodies travel for three minutes to cool before an operator, using an air brush, sprays pigmented lacquer through a stencil to apply an identifying number on each unit. Next follows preliminary inspection and manual touching up if or where needed. Just beyond this point is the unloading station. As motor bodies are unloaded they are again inspected, and if any paint has gotten on those areas that are not to be coated, this coating is cleaned off before the units are placed in cartons for shipment.

Aluminum Co. Of America President Reviews 1954

I. W. Wilson, president of Aluminum Company of America, said in his review of 1954 that the future of the aluminum industry continues to be bright with promise. New markets are steadily developing. Established uses are achieving healthy increases. The market outlook for 1955 is good.

The 1954 production of primary aluminum by the industry in the United States should amount to about 1 million, 460 thousand tons, which is more than 16% above the record breaking tonnage of 1953. Alcoa's production of primary aluminum in 1954 is expected to be about 665,000 tons.

Alcoa's $360 million expansion program started in 1950, neared completion in 1954. Expenditures during the year on new facilities amounted to about $65 million, including certain capital expenditures not a part of the original plan.

Included were considerable enlargement of primary aluminum smelting capacity, and major additions to fabricating and processing equipment.

Two new extrusion presses and additional wire, rod and cable facilities were put in operation. Foil rolling facilities also were expanded.

Placed in regular operation during 1954 were a new chemical products plant at Bauxite, Ark., and a plant at Lancaster, Pa., for the manufacture of screw machine products and fasteners.

In cooperation with the Air Force Heavy Press Program, Alcoa began operation of the world's largest 14,000-ton extrusion press during 1954. Also installation of two great forging presses, 35,000 and 50,000 ton capacities, was nearing completion.

The past year has been notable for advances in the development of aluminum alloys, processes and finishes. Market gains have again been made in building products, transportation, electrical conductor and packaging.

DeVilbiss Builds New Plant In Canada

The increased demand for spray painting equipment, atomizers and other products of DeVilbiss (Canada) Ltd., is being met in a new single story plant on the Barrie Toronto Controlled Access Highway at Barrie, Ontario.

There are about 64,000-sq. ft. of manufacturing space in the structure, providing a layout designed for straight-line production within a building where comfortable working conditions can be economically maintained the year-round.

New DeVilbiss plant at Barrie, Ontario.

Monorails and other overhead handling facilities, and roller conveyors, expedite the movement of work in process through the plant, with forklift trucks, dollies and other surface handling equipment also being used extensively.

Fabrication of the bulkier sheet metal required for large spray booths is concentrated on one side of the plant. Machining, plating, inspection and assembly is on the other side. The tool room and maintenance shop separates the two lines.

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Automatic Viscosity Control

For Mass Production Finishing

SEVERAL OUTSTANDING improvements have been made in methods of applying coating materials for protective and decorative purposes. Some elaborate and carefully engineered systems have been perfected, which are particularly suitable for large-scale operations. For example, an installation made at the Louisville Plant of General Electric Co. for flow coating electric range parts is shown in Fig. 1.

In the past, flow coating was used primarily for protective and undercoats where, from an appearance standpoint, the finish is normally unimportant. Experience with modern installations has shown that it is possible to put on an attractive and high quality finish with flow coating, which inherently is an efficient method of applying paint or enamel. In order to produce a high quality finish with this method of painting it is important to accurately control all the variable factors that can effect the final result—and, of course, viscosity is of the utmost importance. Constant uniform viscosity is necessary to obtain a uniform coating of the desired thickness.

Restores Solvent That's Lost by Evaporation

Continual evaporation of the volatile solvents normally used in painting must be compensated for by measured additions of solvent in order to maintain the required viscosity. Many laboratory type

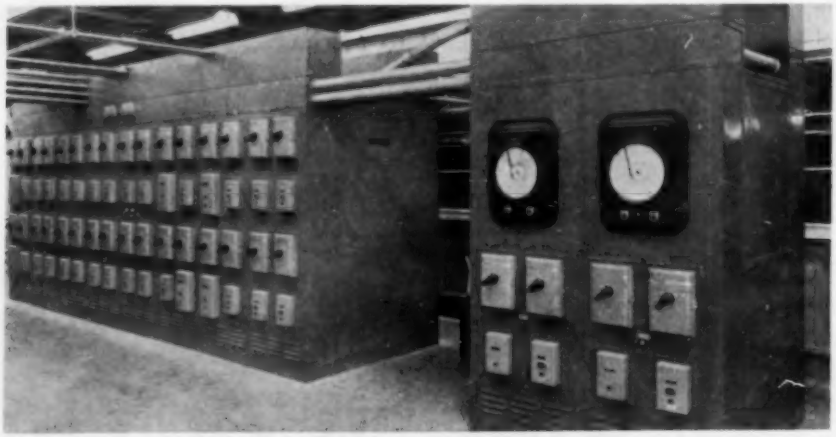

Fig. 1—Two recording viscometers automatically control the addition of solvent to supply tank to maintain correct viscosity of enamels, as well as showing readings every 3 minutes.

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viscosimeters are available for measuring the viscosity of finishing materials but, generally speaking, they are manually operated and do not lend themselves to automatic control.

For accurate viscosity control more frequent determinations and corrections are required than can be practicably accomplished manually. Regardless of how careful or conscientious the personnel may be in making the laboratory determinations, it is not possible to obtain the same accuracy as with automatic equipment. Furthermore, the control of viscosity under manual operation always falls below standard during periods when it is not possible to maintain adequate supervision.

Automatic viscosity control is applicable to practically all methods of product painting and is particularly desirable for flow coating and dipping operations, where the paint is reused and frequent additions of solvent are necessary. In order to obtain the full benefits of a modern painting system, automatic viscosity control is a must.

How This Automatic Equipment Works

A schematic arrangement of a viscosity control system suitable for flow coating and dip coating applications is shown in Fig. 2. The measuring element may be installed on any tank in the system and the measured viscosities will be permanently registered on the recorder. Whenever the viscosity slightly exceeds the control point, a power-operated valve is opened to automatically allow the addition of

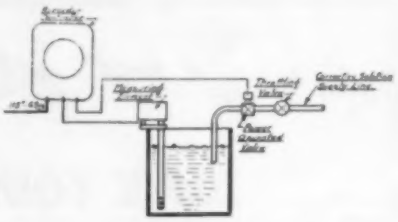

Fig. 2—Schematic arrangement of viscosity control system suitable for use in flow coating and dipping setups.

solvent. The throttling valve in the solvent line regulates the amount of each addition, as may be required for the particular system.

The paint and solvent tanks for many of the new flow coaters are at the same level and for such applications a small motor-driven proportioning pump controlled by the viscometer is used to add the solvent as necessary to accurately maintain a constant viscosity.

The measuring element of a viscometer that is in wide use for applications of this type is shown in Fig. 3. The lower end of the measuring tube extends into the supply of paint. A motor cam mechanism in the top part of the assembly (Fig. 3) is attached to a piston rod for automatically raising the mechanism. As the piston is raised a sample of paint is drawn in through the orifices and passes down through the annular ring formed between the piston and cylinder in which it operates. After the piston reaches its uppermost position, it is then allowed to fall by gravity; the time required for the assembly to fall, expelling the sample drawn in on the upstroke, is a measure of the viscosity. This

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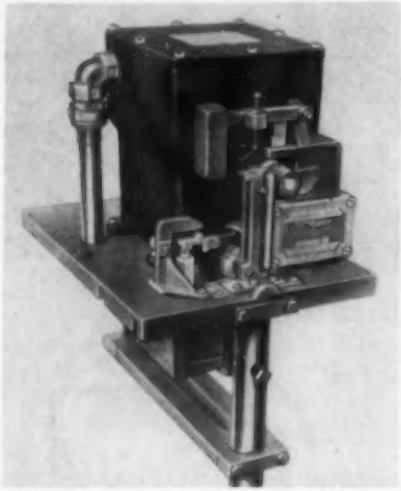

Fig. 3—Measuring element of an automatic viscometer; the lower end of measuring tube extends into the paint supply.

measurement is electrically transmitted to the recorder and converted into chart readings.

The main cover of the recorder (Fig. 4) is furnished with three adjustments. The dial at upper left is for adjusting the control point. The two dials on the right (near the top hinge) are used to set the high and low viscosity alarms. The high and low alarms are normally set slightly below and above the control point so the alarm will go if for any reason the viscosity exceeds or falls below predetermined maximum or minimum values.

The alarm system is a safety feature which gives a warning in case of solvent supply failure, faulty temperature controls, improper viscosity of make-up paint, or any other factors that would prevent the control from maintaining the desired viscosity.

The benefits from viscometers for mass production painting provide an excellent return on the investment. The labor saving alone justifies the investment for applications requiring frequent corrections. The accuracy from automatic control provides an improvement in quality that is not possible with manual control. Furthermore, savings in solvent or coating material are often realized with automatic control.

The procedure for using a viscometer is to simply adjust the control point until the optimum viscosity for the particular conditions is determined. The control then automatically makes small and frequent solvent additions as may be necessary to accurately maintain the correct viscosity.

The foregoing article and illustrations were supplied through courtesy of the Norcross Corporation.

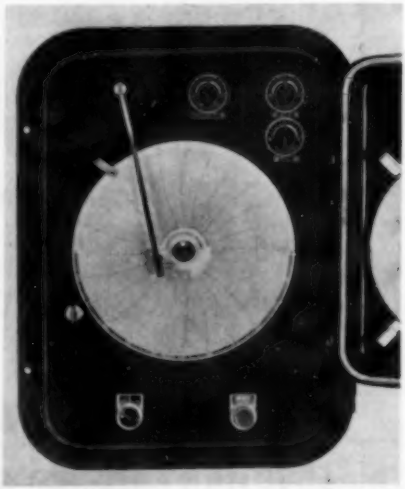

Fig. 4—Main cover of recorder has three adjustments as shown in upper left.

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Typical applications include builders' hardware, vanity and cosmetic cases, lipstick shells and pen caps.

Where decorative color effects are desired on metal, DURACHEM can be supplied in a range of colors with the same chemical stability as the clear finish.

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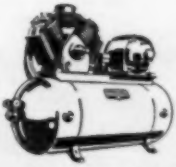
For years the John Smyth Company, Chicago, Ill., has been known as one of the finest custom furniture stores in the country. Their customers expect only the best and they get it. A major factor that insures exceptional quality is Smyth's up-to-date finishing shop.

Spray Guns

Air Compressors



Hose and Connections

BRANCH OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES

John M. Smyth Co. finer finishes, plus 3 extra benefits!

The John Smyth Company, Chicago, Ill., recently installed a complete DeVilbiss finishing department, including: touch-up guns, production spray guns and duster guns; air transformers; air and fluid hose; connections; and water-wash spray booths. They gained finer finishes and these three *extra* benefits:

1. **better lighting and exhaust**
2. **lower insurance rates because of the added safety of this equipment**
3. **65% reduction in spray booth clean-up time**

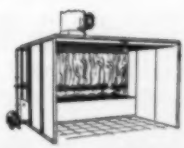
"Better light, better exhaust, better guns than we've ever had," says Wm. Brieschke, John Smyth's skilled refinisher. DeVilbiss booth is constructed of standard panels – low cost to install, easy to revamp if requirements change!

On the production line, as well as in custom furniture shops, DeVilbiss spray equipment is preferred for the faster, better finishes it gives any type product, whether metal, plastic or wood. For, almost anything that pours can be spray-applied better . . . and at lower cost . . . with DeVilbiss equipment.

Your DeVilbiss supplier has helpful information on the latest spray methods. Why not call him, today, to talk over the advantages of low-pressure spraying, hot spraying, or any of your finishing problems.

THE DEVILBISS COMPANY
Toledo, Ohio
Santa Clara, Calif. • Barrie, Ontario • London, England

Spray Booths



FOR BETTER SERVICE, BUY
DEVILBISS

THROUGHOUT THE UNITED STATES, CANADA AND THE WORLD

Estimating Quantity of Materials Needed for Finishing Furniture

BY H. W. CHESTER

MANUFACTURERS of wood furniture, like concerns in most other industries, are in a highly competitive field. In order to attract and sell buyers, in the face of strong competition, they have elected to make frequent changes in the styles and finishes of their products. This practice has resulted in their carrying a considerable number of finishes in many different colors. This is particularly true in factories that produce modern furniture where blond color finishes predominate. In fact, some factories have as high as 35 or 40 colors of finishes in their line.

This carrying of materials for such a large number of colors and finishes has created some very serious problems in regard to having a proper and practical inventory of finishing materials. With all the varied colors it is extremely difficult to keep a sufficint stock of finishing materials to finish the furniture when it is ready to leave the cabinet assembly department. This is especially true where a large volume of furniture is produced daily and where production schedules must be met.

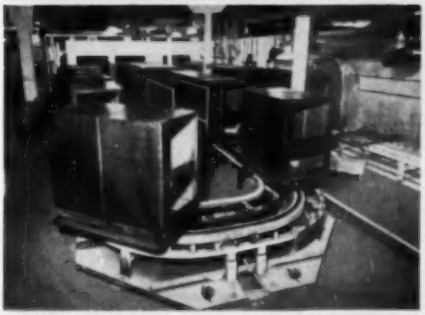
While it is necessary to keep an ample supply of materials on hand at all times, care must be used in buying materials so that a surplus is not left on hand when the suites are discontinued. This can easily happen when styles and colors change so often. Here's another thing to keep in mind: Most manufacturers carry such a long line of styles and colors it is sometimes several months between production runs on any one color. Since the life of some finishing materials is comparatively short, they may deteriorate before they are used.

Accurate Estimate Needed

In order to keep an adequate supply of finishing materials on hand it is necessary for the foreman finisher to accurately estimate his needs for each lot of furniture of each color. It is always several weeks from the time a lot run of furniture is given to the lumber and cutting department until that furniture in the white is ready to enter the finishing department. This interval allows the foreman finisher plenty of time to estimate the amount of finishing material that he will need, and he has plenty of time to place his order and get delivery from the finishing material supply house.

Foremen finishers generally use one of two methods for estimating

ACTUAL PHOTOGRAPHS OF MONEY BEING MADE . . . . .



. . . on Complete DeBurgh Finishing Systems

Just 4 of more than 100 progressive American and Canadian furniture makers whose DeBurgh complete finishing systems—engineered and installed by KOCH—are paying dividends like these every day they operate:

Labor savings up to 50%, largely through the elimination of indirect labor . . . floor space savings up to 30% . . . flexibility that allows for lower production rates at correspondingly lower costs . . . and the complete investment amortized in a matter of months!

If you're still on the fence about conveyorization . . . still believe your problems too "different" to be solved by DeBurgh conveyorization, then you've a highly profitable revelation awaiting you. Call KOCH now, and start the wheels turning toward a more modern, more efficient, more profitable furniture plant. No obligation for layout and survey.

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GEORGE KOCH SONS, INC.

EVANSVILLE 4, INDIANA

the quantity of materials that will be needed for finishing a specified lot of wood furniture.

Method No. 1, and the one most commonly used, is to run actual tests to find out the amount of material required to finish a specific area of wood surface on certain pieces of furniture. For instance, five gallons of sealer and five of lacquer are sprayed, and the surface of the finished product, as covered by each material, is measured or closely estimated to determine how many square feet per gallon each material will cover. A record of this is kept by the foreman finisher and when it is necessary to order material he can use this information to estimate the amount of material he will need.

Get Surface Footage From Billing Department

Most large factories build wood furniture in lots of from 400 or 500 pieces up to several thousand of each pattern. The amount of surface footage to be finished on each piece of furniture can be obtained from the billing department of the furniture plant. By multiplying the number of feet to be covered on each piece, by the number of units to be made, the total number of square feet to be finished can be obtained. Then divide this by the number of square feet each gallon of finishing material will cover. This will give an accurate estimate of the number of gallons of material required for finishing the units of furniture in the lot.

Although not as accurate as the one just described, method No. 2 of estimating the material to be used, is to spray any amount of finishing material from one gallon on up and keep a record of the number of pieces of furniture this amount of sprayed material has covered. It is always best to use one pattern—such as dressers, chests, beds, etc. —to determine the amount used. By measuring the amount for each article of furniture separately, a much more accurate estimate can be obtained.

Pieces Covered Per Gallon of Material

The number of pieces covered by each gallon of finishing material can be divided into the total number of units to be finished, This will give an estimate of the amount of material needed for coating the entire lot.

If enough care is used in estimating and ordering finishing materials, it will not only prevent expensive close-downs of finishing departments for lack of enough finishing materials, but it will also save a considerable amount of money that is often lost because the foreman finisher has over-estimated amount of material he needed. The excess material had to be discarded.

With competition as keen as it is today, we are compelled to stay in specialized finishing, whether we want to or not. So long as we do this, then it will be necessary for the foreman finisher to use every precaution at his command to see that his inventory of finishing materials is neither too little nor too much for the style, design, color and quantity runs of merchandise being produced.

The ingenious Beaver Dam, constructed of twigs, brush, stones and mud, possesses amazing sealing qualities . . . some dams extending over 1000 feet across and sealing off ponds of hundreds, even thousands of acres.

when it comes to

sealers . . .

Nature's architect, the Beaver, seals his structures with twigs, mud, and a great deal of time and effort. In industry, fortunately, important sealing operations are accomplished much more easily and efficiently thanks to the great variety of fast application, high quality sealers manufactured by James B. Day & Co

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Industrial Finishes for Application by All Methods

sealers	**lacquers**	**stains**
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shellac	**undercoats**	**specialty finishes**

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Find out more about...

COVERAGE RATES

BAKING SCHEDULES

METAL PREPARATION

DUPONT Industrial Finishes Technical Bulletin

ROOM AIR-CONDITIONING UNITS

BULLETIN NO. 11 FIRST EDITION

APPEARANCE AND PROTECTION

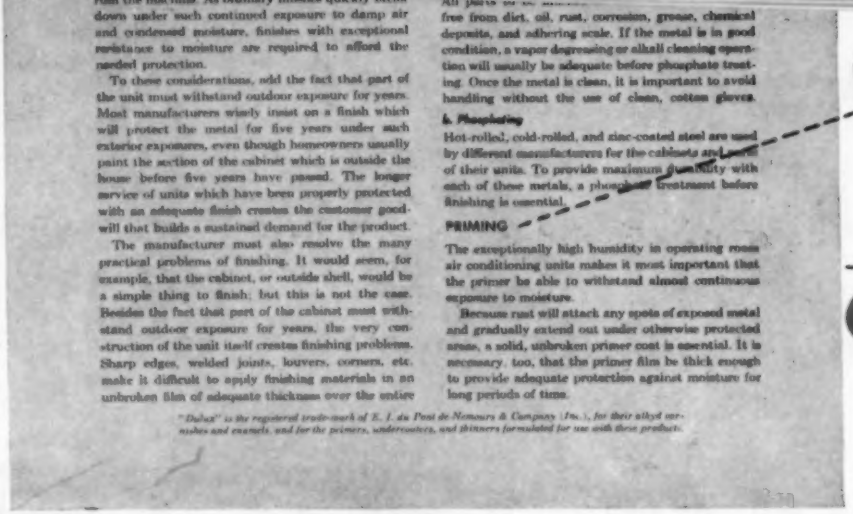
Product appearance is an important consideration in every sale. When the product, like room air-conditioning equipment, becomes part of the home furnishings, attractive appearance is essential.

But, the finish does more than make the product attractive; it protects and prolongs the life of the unit. As the air inside an operating unit is humid, often to the point of saturation, moisture condenses on the inside of the cabinet and the functional parts. For this reason, the framework, supports, and operating parts must be thoroughly protected so rust and corrosion do not destroy the efficiency and finally unit. Yet, such a film is necessary to resist moisture and corrosion.

The many problems likely to be met in applying finishes to room air conditioners are briefly outlined in this bulletin. It is based on the experience gained in helping designers, production engineers, and finishing foremen in the air-conditioning industry solve their finishing problems. We hope this report will help you produce beautiful, marketable units which are thoroughly and completely protected to give years of service.

METAL PREPARATION

a. Cleaning



ruin the machine. As ordinary finishes quickly break down under such continued exposure to damp air and condensed moisture, finishes with exceptional resistance to moisture are required to afford the needed protection.

To these considerations, add the fact that part of the unit must withstand outdoor exposure for years. Most manufacturers wisely insist on a finish which will protect the metal for five years under such exterior exposures, even though homeowners usually paint the section of the cabinet which is outside the house before five years have passed. The longer service of units which have been properly protected with an adequate finish creates the customer goodwill that builds a sustained demand for the product.

The manufacturer must also resolve the many practical problems of finishing. It would seem, for example, that the cabinet, or outside shell, would be a simple thing to finish; but this is not the case. Besides the fact that part of the cabinet must withstand outdoor exposure for years, the very construction of the unit itself creates finishing problems. Sharp edges, welded joints, louvers, corners, etc. make it difficult to apply finishing materials in an unbroken film of adequate thickness over the entire

All parts of the [illegible] free from dirt, oil, rust, corrosion, grease, chemical deposits, and adhering scale. If the metal is in good condition, a vapor degreasing or alkali cleaning operation will usually be adequate before phosphate treating. Once the metal is clean, it is important to avoid handling without the use of clean, cotton gloves.

b. Phosphating

Hot-rolled, cold-rolled, and zinc-coated steel are used by different manufacturers for the cabinets and parts of their units. To provide maximum durability with each of these metals, a phosphate treatment before finishing is essential.

PRIMING

The exceptionally high humidity in operating room air conditioning units makes it most important that the primer be able to withstand almost continuous exposure to moisture.

Because rust will attack any spots of exposed metal and gradually extend out under otherwise protected areas, a solid, unbroken primer coat is essential. It is necessary, too, that the primer film be thick enough to provide adequate protection against moisture for long periods of time.

"Dulux" is the registered trade-mark of E. I. du Pont de Nemours & Company (Inc.), for their alkyd varnishes and enamels, and for the primers, undercoaters, and thinners formulated for use with these products.

PRIMING

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Chemically engineered to do the job better

E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Dept. IF-51 Wilmington 98, Delaware.

Gentlemen:

Please send me, free of charge, your new bulletin on finishing room air-conditioning units.

Name _____ *Title* _____

Firm _____

Street _____

City _____ *State* _____

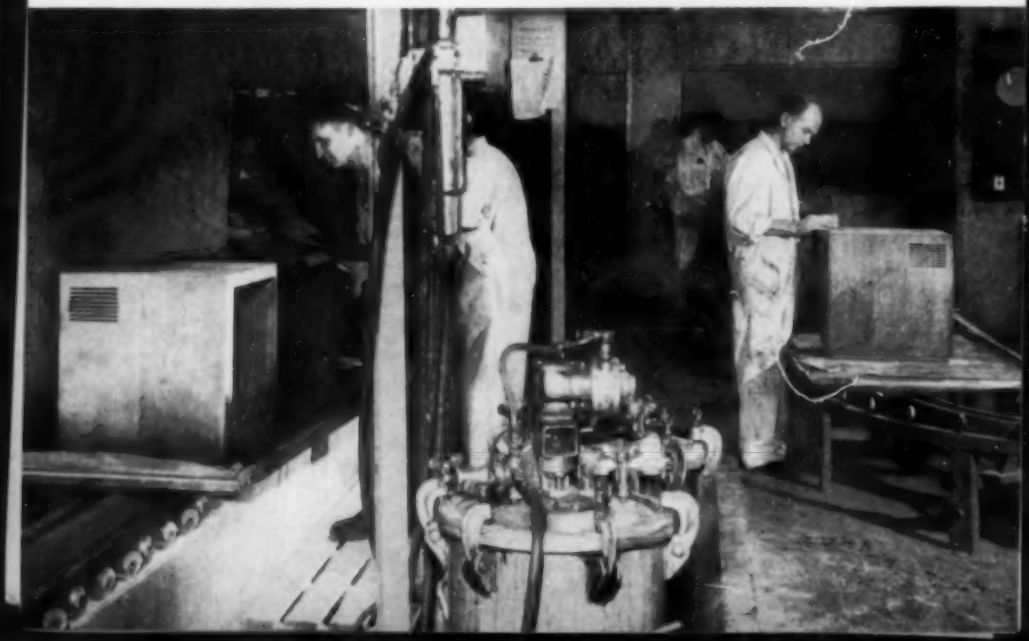
Pallet Type Conveyors
IN FURNITURE FINISHING

AMONG THE several types of labor saving equipment that are now in service in many finishing departments, one is the pallet type conveyor developed especially for use in furniture and cabinet factories, although it is adaptable for moving other products through various manufacturing processes.

Its purpose is to not only move the furniture but to support partially or completely assembled articles of furniture at convenient working height on a pivoted pallet which can be turned easily to give production workers quick access to all exposed surfaces of the piece. The pallets ride on a ball-bearing castered track which has a chain drive in the center. Provision is made for moving both large and small pieces on the same conveyor, with adequate spacing and time allowed for the required operations on each. Single pieces may be withdrawn from the line for any slow or unusual work, if or when this is desirable.

Pallet type conveyors can be designed and built to move any type, volume or quality of products, and to operate on one or more floor levels. Their operation can result in uniformly high quality finishing

TV cabinets moving through finishing department operations on a pallet type conveyor. Notice convenient working height for workers. Photograph, DeBurgh Conveyors, Inc.



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HERE ARE A FEW OF THE PLUSES YOU RECEIVE FROM PERFECTION'S EXCLUSIVE PROCESS OF SYNTHETIC FLATTENING:

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- A Waxed Feel
- A Water Proof Finish
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Available in: PERFEX SATIN FINISH (varnish); CLEAR SHEEN SATIN (lacquer)

IF YOU MANUFACTURE FURNITURE, WRITE US FOR SAMPLES

Perfection PAINT & COLOR COMPANY

INDIANAPOLIS 2, INDIANA

at predetermined timing, the use of small floor space, a minimum of rejects, few production workmen, and a minimum of worker fatigue.

The pallet type conveyor provides a firm base for the load, and any pallet can be easily turned on the conveyor to give workers at every station quick access to all sides in the best light; they can even hop on and ride a moving pallet to properly sand or wipe the tops of pieces.

Provisions Are Made for Slower Operations Too

Where it is desirable, a piece of work can be stopped temporarily for such operations as stripping, applying decals, burning in, decorating, etc.

Finishing conveyors have been developed to such a point that even on a timed conveyor, regulated at say 1½ minutes per station, additional work stations can be installed to permit longer time operations such as applying leather tops, decorating, rubbing, etc., and still run the balance of the production regularly at the 1½-minute speed rate without disrupting the production flow.

Another pallet conveyor development permits automatic transfer of pallets, after the final finishing coat, into a non-powered section for drying and cooling in close pack formation to conserve space, then automatically returning the pallet to powered lines in proper sequence and in proper work position for rubbing, trimming and any other operations to follow.

In a complete pallet conveyor installation, the furniture is assembled, finished, cooled, rubbed, trimmed and packed for shipment, with only one transfer of the pallets being required. There is no handling of the work from the machined parts stock to the shipping room. This system eliminates a vast amount of non-productive labor.

A recent development of the floor based pallet-type conveyor, which has heretofore traveled from floor to floor on an incline, is an automatic elevator that unloads the pallet from a conveyor located on one floor and automatically loads the work onto another conveyor properly synchronized on the floor above or below.

"Table legs get our complete attention around here, Jameson."

Many methods of wood grain reproduction are available, and very beautiful effects can be obtained by the proper use of any one of these methods.

Mac's

FASHION FINISHES

"Eighty Years of Service"

As we begin our 80th year of service

to our many friends and customers, we

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Well Sanded Surface Before Paint Application

ONE OF THE basic rules of wood finishing is to begin with a well sanded surface, if a quality finish is to be obtained. This is just as important in the coating of wood as thoroughly cleaning a metal surface before painting. Paint will not adhere to metal that contains oil, grease or finger marks. Paint will not cover up defects in either wood or metal surfaces. If anything, it has a tendency to magnify any unevenness or roughness. This applies to both pigmented as well as clear coatings.

Therefore, it is imperative that wood surfaces be sanded until they are uniformly smooth. When this has been accomplished the job is only half finished. The next step is to make sure the wood surface is entirely free of dust left by the sanding operation. Removal of surface dust by a quick, haphazard swipe of a dusty rag is not enough. In my opinion, a strong compressed air jet is the best way to get the dust off the surface and out of the pores of the wood. You don't even need a nozzle on the air hose. In fact, an air hose minus the nozzle has a tendency to swing in a circular motion due to the air pressure. This aids in the blow-off operation as more surface area is covered with less effort by the operator.

For a quality finish, the wood surface must not only be smooth, it must be thoroughly clean.

Manufacturer's Representative Appointed by New Wrinkle, Inc.

New Wrinkle, Inc., Dayton, Ohio, announces the appointment of Davis & Davis, 740 No. Rush St., Chicago, Illinois, as manufacturer's representative serving the area on matters dealing with the use and sale of Wrinkle Vehicles in patented Wrinkle Finishes. These vehicles have been used and accepted by industry for the past five years, and continued growth and demand in their use have prompted this new arrangement.

The firm of Davis & Davis started in 1921 by Col. Alexander M. Davis and his son Edward, who now heads the business, will cover the states of Illinois, Wisconsin, Minnesota, and parts of Indiana, Iowa, and Michigan. These proven Wrinkle Vehicles make possible more uniform and trouble-free production of Wrinkle Finishes. They will bring to users of vehicles new and aggressive ideas for uses of Wrinkle in industry.

Comet Coatings Opens Branch Plant in Puerto Rico

The opening of its branch plant, Comet Coatings Co., Inc., in Cupey, Puerto Rico, has been announced by Murray R. Garfinkel, president, Comet Chemical Co., Inc., Newark, N. J. The new plant has been set up to handle its expanding trade in the West Indies, Central and South America.

Covering 10,000-sq. ft., it is located on five acres of land adjacent to San Juan harbor. It is prepared to supply a full line of industrial lacquers for wood, metal and paper, leather finishes, thinners, interior and exterior paints and related products.

Alexander A. Ross, Treasurer, will have charge of production and quality control of all products manufactured and shipped from the Puerto Rican plant. The local plant is prepared to provide technical service to all industrial finish consumers in its area.

Beckwith Elected President of Paint & Varnish Production Clubs

Newell P. Beckwith, Vice President and technical director of Rinshed-Mason Co., Detroit, Mich., and also vice president and general manager of Rinshed-Mason Co. of Canada, Ltd., recently became the 33rd man to be elected to the presidency of the Federation of Paint and Varnish Production Clubs, a cooperative, nonprofit technical association composed of some 3500 technologists and production personnel employed in the manufacture of protective and decorative coatings.

Mr. Beckwith, Federation President-Elect in 1954, succeeded Dr. Calvin J. Overmyer, and began his one-year term of office at the close of the Federation's 32nd Annual Meeting held at the Palmer House, Chicago, last November.

Mr. Beckwith became associated with Rinshed-Mason Co. in 1940, and six years later was named chief of automotive research. He became director of research in 1949, and then vice president and technical director in 1952. Earlier this year he was also elevated to the positions of vice-president and general manager of the company's Canadian plant in Windsor, Ont.

TOUSEY
PRODUCTS
DURACOTE for DURABILITY
SMALL orders are handled promptly at TOUSEY. They receive the same careful attention as tank car or carload drum shipments. Color matching is accurate and uniform quality is maintained in all orders and re-orders. Even if your requirements are not large, write or phone us for prompt and careful handling of your order.
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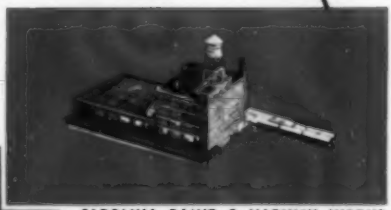
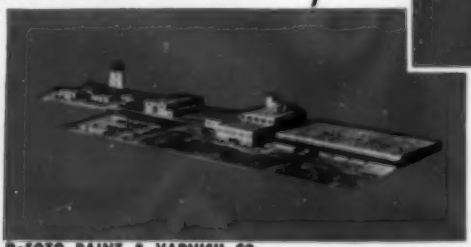


CAROLINA PAINT & VARNISH WORKS
Greensboro, N. C.



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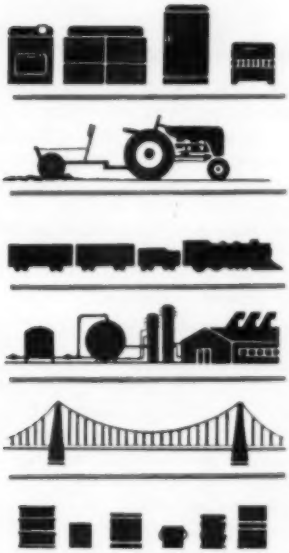
Garland, Texas

serve the nation!

Tailor-made finishes for every job



KOROLITE—Baking primers and enamels of the highest quality

SYNTHEX—Air-drying primers and enamels formulated to fit each drying schedule

CARLAST—Transportation finishes designed to give maximum durability

HICOR—Corrosion resistant finishing systems for protection against corrosive atmosphere

PRIME PHOS—Metal treatments to give optimum protection with minimum investment and equipment

KOROFLEX—Metal deco finishes—interiors and exteriors—from sizes to wet ink finishing varnishes

WHEREVER your plant is located, there is a **NATIONAL AFFILIATE** representative available to work with you. In the event of any local emergency, each plant has four sister companies to call upon so that service and supply are always available.

Who Does Batch Pickling

Will you please advise us of any contacts you might have with concerns which perform pickling of steel shapes for porcelain enameling, within a radius of fifty miles of Elyria, Ohio? The parts to be pickled range in size from small pieces up to three feet square.—*R. C. M.*

Name and address of inquirer will be furnished to interested firms.—*Ed.*

Our Roller Coating Machines Will Do the Work

In reading through the December issue, an item entitled "Small Roller Coater" attracted our attention. We have built machines such as that requested by the "S. Stamp Works", and would be quite interested in recommending equipment to meet their requirements.

We would also appreciate receiving the address of the Durolastic Co. Union roll coating machines have been used to apply flocking adhesives and, because a controlled film of adhesive can be applied over the entire surface of the stock, the flocked surface is of a much higher quality.—*The Union Tool Corp.*

Protective Hand Creams Wanted

Would you please send us the names and addresses of suppliers of protective hand creams? Our problem is with naphtha and naphtha-type solvents.—*W. B. W.*

Names and addresses of several sources of supply furnished.—*Editor.*

Who Buys Paint Sludge?

We note from the INDUSTRIAL FINISHING magazine, that you have a list of firms who are interested in buying paint sludge. We accumulate approximately 20 drums per month, and would appreciate receiving the list of companies who are interested in this material.—*I. & F. J.*

List furnished.—*Editor.*

Electrostatic Painting

In the July, 1954, issue of INDUSTRIAL FINISHING (page 18), you published an article pertaining to Electrostatic Painting. We would appreciate receiving some general information on this type of equipment from the manufacturer. We have no specific use for such equipment at this time, but if we knew more about its scope and costs, we may find a definite use for it in our plant.—*Plant Engineer.*

Name of manufacturer given.—*Ed.*

Wants Tumbling Barrel

In the section, "Letters From Readers", December issue, we read an inquiry regarding tumbling barrels. The editor replied that he was sending names and addresses of several man-

National Sanders

CAN SPEED PRODUCTION IN YOUR FINISHING OPERATION

Whether you need an orbital action sander for fast stock removal, or a straight-line action machine for working with the grain, National has the sander you need. They have a proven record of reliable and efficient service, long life, ease of operation, and for producing the best sanded surface in the shortest possible time. Let us send you full information . . . write today.

MODEL 300

NATIONAL NS SANDERS

NATIONAL AIR SANDER, INC.

2820 AUBURN ST., ROCKFORD, ILLINOIS

ufacturers of tumbling barrels. We are interested in buying a barrel of this type. Will you please send us names and addresses of these manufacturers?—*C. H. Co., Inc.*

Names and addresses furnished.—*Editor.*

Whose Strippable Material?

Referring to your November issue regarding finishing wood tables, can you furnish us with the firm's name and address making the strippable material sprayed on before finishing, as outlined in this article?—*S. Furn.*

Name supplied.—*Editor.*

Sources for Flock Adhesives

To the many requests for the address of the Durolastic Company, manufacturer of flock adhesives, as mentioned in "Letters from Readers", page 84, December issue, and to others who may be interested, here it is: 25 E. Main St., Sussex, N. J.

"Now there is a touch-up paint at its best in catching the eye!"

Pre-cut Masks

An answer to a request for information on disposable, pre-cut masks appears on page 84 of Dec. issue. We too are interested in such information and would appreciate receiving bulletin #160-B from the W. H. Brady Co.—*M. L. J. Corp.*

Address of W. H. Brady Co. supplied.—*Editor.*

Dip-Coating Machine

We are in the market for a machine that can dip-finish pieces of wood 12 to 15-in. in length. Do you know of anyone who manufactures such a machine, or could do so? We would like to get started on this as soon as possible and would appreciate any information you could get for us.

You once mentioned a Mr. C. Raymond Syer, a finishing engineer, and you told me that he was in England at that time. Has he returned and if so, how could I get in touch with him?—*X. (World's Largest Manufacturer of Wooden Rulers).*

In a letter we are naming several firms that make and sell dip-coating machines.

Mr. Syer's address is now Beverly Hills, California.—*Editor.*

Painting Doll Eyes

We too, are confronted with the problem of painting doll eyes on a mass production scale. Do you know of any companies that build semi-automatic or fully automatic spraying

peel off over-spray the fast, safe, easy way with "LIQUID ENVELOPE"

the ORIGINAL time-tested strip-coating

Peel 'em clean in minutes — then re-spray with "LIQUID ENVELOPE". That's the simple, labor-saving way to keep your booths firesafe, lighter, and better ventilated.

"LIQUID ENVELOPE" is non-toxic . . . does not contain dangerous chlorinated solvent. It will not corrode metal walls or ventilating ducts. And it's flame proof and fireproof . . . the dry film will not burn or support combustion.

Remember "LIQUID ENVELOPE", the original strip-coating, does exactly what we claim. It's been used for years in hundreds of plants.

PROVES-IT SAMPLE OFFER

5-gallon can at the drum-lot price to new users only. Order from nearest distributor.

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Abrasive & Supply Co., Detroit, Mich.
Aviation Lubricants Co., Inc., San Diego, Calif.
Bay State Spray Equipment Co., Springfield, Mass.
C & H Supply Co., Seattle, Wash.
The Dean & Barry Co., Columbus, Ohio
Eastern Spray Equipment
c/o Mitchell-Love, Philadelphia, Pa.
Edgcomb Steel of New England, Inc., Milford, Conn.
Eley's Newport News, Va.
Ellicott Paint Co., Inc., Buffalo, N. Y.
Finishing Equipment & Compressor Co.
Kansas City, Mo.
John Henry Foster Co., Minneapolis, Minn.
Franklin Supply Co., Providence, R. I.
General Spray Equipment Co., Boston, Mass.
H. J. Gottemoller Co., Inc., Baltimore, Md.
Globe Chemical Co., Louisville, Ky.; Cincinnati, O.
The Hubbard Co., San Francisco, Calif.
Kellermann Paint Co., New York, N. Y.
Koehler Rubber & Supply Co., Cleveland, Ohio
The Lea Manufacturing Co., Waterbury, Conn.
The Leonard Co., St. Louis, Mo.
Nelson Industrial Supply Co., Grand Rapids, Mich.
Mid States Industrial Corp., Rockford, Ill.
Vic Miner Co., Toledo, Ohio
O'Donahue Sales Co., Milwaukee, Wis.
Paints & Lacquers, Inc., Chicago, Ill.
Paull & Griffin Co., San Francisco, Calif.
Plastic Paper Co., Los Angeles, Calif.
Porter Paint Co., Louisville, Ky.
Protective Prod. Distributors, Hamburg, N. Y.
R. W. Renton and Co., Cleveland, Ohio
Hugh Russell & Sons, Ltd., Montreal, Can.
Sceboll Chemical Co., Rochester, N. Y.
Sprayway Co., Los Angeles, Calif.
Suppiee-Biddle-Stultz Co., Philadelphia, Pa.
(Industrial Division)
Tanner and Co., Indianapolis, Ind.
Tri-State Spray Equipment & Compressor Co.,
Omaha, Neb.; Rock Island, Ill
In Europe:
Jenson & Nicholson, Ltd., London, Eng.

BETTER FINISHES & COATINGS, INC.

268 Doremus Avenue,
Newark 5, N. J.

122 East 7th St.,
Los Angeles 14, Calif.

equipment to paint small parts? Make electroformed masks? Sell the right paint? Any information you may give us will be appreciated.—*H. Corp.*

Information furnished.—*Editor.*

Interested in Painters' Rollers

Could you kindly supply the names of manufacturers of painters' rollers, the kind that one can paint a wall with by rolling on the paint with a soft rubber roller? We want to ascertain whether they can make a special pattern, or what patterns they have on their rolls.—*S. P. N.*

Names of several manufacturers supplied.—*Editor.*

Patching and Repairing

In a recent issue, the article about "Finish Patching and Repairing" by Delbert Bickel is of much interest to us. Do you have a reprint available of this article? Or, if not, an extra copy of the issue in which it appeared? We have several departments in our factory that can use this information to advantage.—*C.C.Co.*

"You're looking at our hot air dryer!"

No reprints have been made, but we are sending you two extra copies of the magazine.—*Editor.*

Three-Color Paint Coating By Dipping

In a recent issue of Industrial Finishing, probably October 1954, there appeared an article on three-color paint coating by dipping. The article coated probably was a magnet. A copy of this interesting article addressed to the attention of the writer will be much appreciated.—*R. M. A.*

Tear sheets of article sent.—*Editor.*

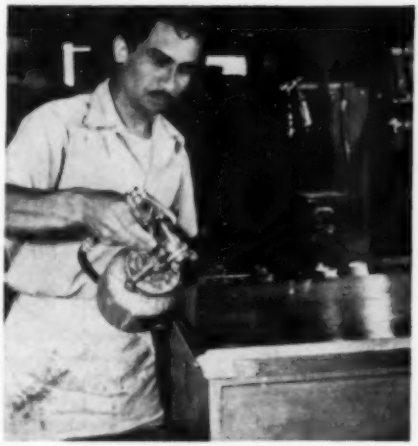
Strippable Coating Wanted

We are interested in obtaining the names of any manufacturers who have available a strippable coating that can be applied over painted materials, or metal surfaces. We would like information on any such coating that could be applied cold either by a dip method or spraying. Such a coating is to be used for both rust prohibitive and abrasion resistant purposes.—*V. P.*

There are several manufacturers of strippable coatings. Names and addresses have been furnished.—*Editor.*

Tumble Finishing

A few days ago, I wrote your company, requesting reprints on tumbling. I received same, and am wondering if you will forward the enclosed let-

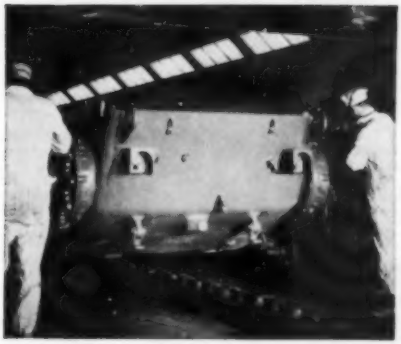


RETOUCHING MADE EASY

Lacquer speeds finishing operations at furniture factories, makes touch-up a snap at retail outlets. The versatility of this fastest drying of all protective coatings makes it ideal for modern, high-speed production methods.

RUST ROUTED

Castings which must be temporarily stored or shipped long distances before finished machining is done are protected against rust quickly and economically by a single coat of lacquer.



A SPEEDY FINISH

A two-coat lacquer finishing system not only kept this M-48 tank assembly line moving at top speed but has saved taxpayers over $1,000,000. It's a good example of how lacquer research pays off in dollars and cents.

For further technical or marketing information on these or any other developments in lacquer-type coatings made from nitrocellulose, ethyl cellulose, cellulose acetate, or Parlon® (chlorinated rubber), write to:

Cellulose Products Department
HERCULES POWDER COMPANY
928 Market St., Wilmington, Del.

CL-54-7

ters and samples to the men who evidently are able to furnish us materials to use in painting the desired pieces.—*M. A. M.*

Letters forwarded.—*Editor.*

About Doll's Eyes!

In the December edition of your magazine, in the section "Letters from Readers," on page 80, you received an inquiry from the M. Brush Co., regarding a painting problem for doll's eyes. Kindly notify the writer in which city this firm is located.—*L. Lurie.*

Nu-Brick Address Requested

Please send me the address of Nu-Brick Products, manufacturer of weather-proof aluminum siding for homes, mentioned in the December 1954 issue.—*H. M.*

"Can your company use a paint sludge, Ed? We'll be glad to give you, for free, Jordan, there."

DuPont Has New Secretary

Pierre S. du Pont, 3rd, was elected secretary of the Du Pont Co. last month, by the Board of Directors, to succeed Lammot du Pont Copeland, who was recently elected a vice president and designated chairman of the Finance Committee.

Mr. du Pont, 43 years old, has had wide experience in engineering, development, and sales in the company since he joined it in 1934. He has been a director of the company since 1948 and has been assistant director of sales of the Rubber Chemicals Division, Organic Chemicals Department, since 1951.

Mr. du Pont is the son of the late Lammot du Pont, former president and chairman of the board of the company, and is a great-great-grandson of E. I. du Pont de Nemours, who founded the company in 1802. His home is on Rockland Road, near Wilmington. Mr. du Pont was graduated from the Massachusetts Institute of Technology with a bachelor of science degree in 1933.

Michigan Oven Appoints Gill

A. C. Towne, Jr., president of the Michigan Oven Co., Detroit, Mich., has announced the appointment of LeRoy M. Gill as Sales Manager.

Guidance of Michigan Oven's entire national sales organization as well as foreign distribution for their principal product — industrial ovens—will be assumed by Mr. Gill.

Since joining Michigan Oven in 1949, Mr. Gill has worked in engineering, field erection supervision and sales.

"A comprehensive program to increase both domestic and foreign distribution will be initiated," states Mr. Gill.

Roche New Personnel Director

The Cambridge Wire Cloth Co., Cambridge, Md., has announced the appointment of Richard Roche as personnel director. Mr. Roche has been associated with the company for the past fourteen years, serving in a number of capacities. He was closely associated with the woven wire conveyor belt department for nine years, acted as safety director, supervisor of inventory and receiving for the past five years, and also supervised the First Aid department.

Announcing a proven

Cabinet Lacquer

(27% HIGH SOLIDS)

BARRETT'S Cabinet Lacquer is a 27% solids, cold spray, wood finish. It is recommended for use on furniture, TV and kitchen cabinets, shelf goods, toys and other wooden objects where an economical, full tough coating is desired.

BARRETT'S Cabinet Lacquer rubs and polishes nicely. Tests show that the film has excellent alcohol resistance. This Lacquer has been in production for some time and has been well received in the trade.

Solids: 27%
Color: Pale Straw*
Alcohol Resistance: Excellent
Rub & Polish: Machine or hand
Sheen: 25, 50, 75 and full gloss or made to your specification.
Cold Check Resistance: 15 cycles on 3-ply walnut and mahogany veneer.

**For light blonde finishes ask to see our water-white cabinet lacquer.*

TRY IT YOURSELF! You are invited to write on your company letterhead for prices and a free sample of this better cabinet lacquer, specifying Sheen desired. Data Sheet is also available.

Barrett Varnish Company

1532 S. 50th COURT CICERO 50, ILLINOIS

a complete line of dependable industrial finishes since 1870

TO ALL WOOD FINISHERS
WE WISH A
HAPPY & NET PROFITABLE
1955

*". . . if wishes were horses beggars would ride"**

Let us translate our New Year wish for you into concrete reality. Let's stop wishing and start doing! Start by eliminating wasteful indirect labor and save 50% of your finishing costs. Investigate now for a three-cent stamp**

*Old Saw
**Stamps are tax deductible.

"Designed BY a Furniture Manufacturer FOR Furniture Manufacturers"

Investigate!

DeBURGH CONVEYORS, Inc.

10 SOUTH 11TH AVE.
EVANSVILLE, INDIANA

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WASHINGTON 6, D. C.

*Pat Nos. 2317675, 2640580, 2640607

ROCKFORD VARNISH

RV

ROCKFORD, ILLINOIS

MANUFACTURERS OF
PROTECTIVE AND
DECORATIVE FINISHES

Do you like to look into those beautiful eyes? Then . . . look into the products of Rockford Varnish Company: all the standard finishing materials, accurately compounded, in any desired colors, shipped reliably in quantities to suit your schedules — PLUS a number of interesting and useful "specialties" that can put a new look in your finishing specifications. Try us.

Affiliate: GORDON BARTELS CO., *Roller Coating Specialists*

Color Change in Master Samples

We have a problem involving color change in master samples. We believe that we have seen a discussion of this problem in your publication at one time or another. We have been unable to locate the articles, however. If you can give us any information, or suggest a source of information, we will be most grateful.

When a color is originally formulated, panels are coated for future reference. One (A) panel is filed in a master file and not exposed to light thereafter. Another (B) panel is filed in a cabinet and referred to frequently. This (B) panel is used as a master standard and subsequent production lots are compared with it for color approval.

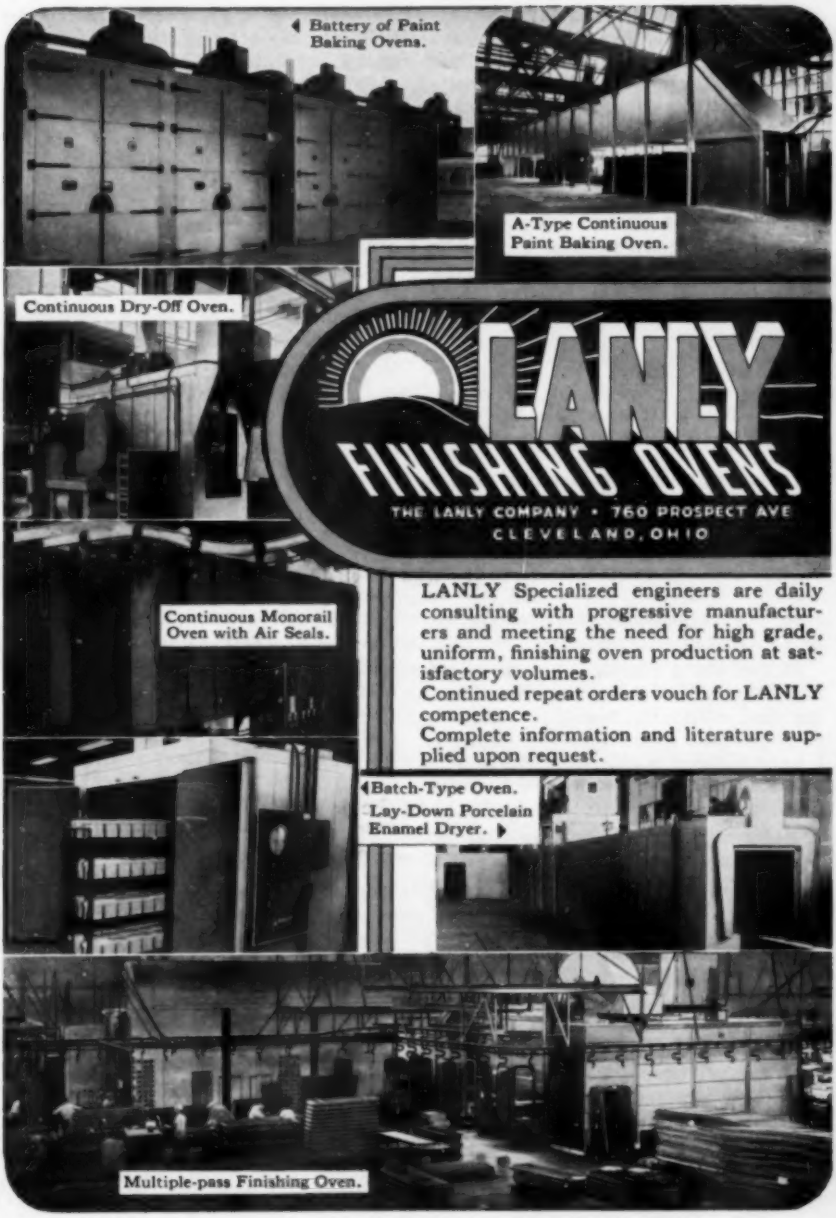
Recently it was noticed that current colors were not matching the master (B) sample. The production department was so insistent that their current production was correct, that the sample (A) which had been filed away and never exposed was brought out to settle the dispute. It was discovered that all three panels were now a different color.

Apparently a chemical reaction of some sort is taking place on the sample panels. We feel that some of your readers probably have a similar problem. We would appreciate receiving any advice as to how they handle this problem.

This really is our customer's problem. Of course, it therefore becomes our problem. We would like to offer our customer any assistance we could in order that he can prepare master samples which will serve their intended purpose.—*C.P., Inc.*

There are two methods of procedure available to eliminate color change in master samples. One method, and perhaps the best, is to formulate the exact color carefully to produce the desired standard. Then immediately, have a test panel produced in porcelain (vitreous) enamel in exactly the same color. One company follows this procedure, having an individual who works in the basement of his home, produce these color samples in porcelain enamel and fire them in a kiln. I believe his charge is $30.00 per sample color. It seems as if the porcelain enamel color panel is less fugitive to light, and at the same time will retain its color in darkness. As you have found out, some colors will change in hue in darkness as well as in light. There must be some firm either in your city, or in Chicago, that is equipped to make up test panels in porcelain enamel.

The other method is to obtain a color photometer, which is a machine or instrument that gives a numerical value to, for instance, the red, the green and the yellow in a specific color at the time of formulation or immediately thereafter. The record of these numerical values becomes the standard, or in other words, the master sample. As time goes on and other batches are produced, samples of the material are tested and compared with the numerical values of the standard record to ascertain whether or not the color is being duplicated. Theo-


Battery of Paint Baking Ovens.
A-Type Continuous Paint Baking Oven.
Continuous Dry-Off Oven.
LANLY
FINISHING OVENS
THE LANLY COMPANY • 760 PROSPECT AVE
CLEVELAND, OHIO
Continuous Monorail Oven with Air Seals.
LANLY Specialized engineers are daily consulting with progressive manufacturers and meeting the need for high grade, uniform, finishing oven production at satisfactory volumes.
Continued repeat orders vouch for LANLY competence.
Complete information and literature supplied upon request.
Batch-Type Oven.
Lay-Down Porcelain Enamel Dryer.
Multiple-pass Finishing Oven.

retically, this is the correct procedure. In practical use, however, there are bound to be many variables, any one of which might just throw the results off enough to produce an error, and it would not have to be very much to do this. One of these instruments costs about $1,500. There is one on the market for about $500, but I would not recommend it. If interested in one of these instruments, it can be obtained from Gardner Laboratories, Inc., Bethesda 14, Md., or General Electric Co., Schenectady, N. Y.—*P.C.B.*

Time Standards for Spray Painting

I was interested in reading, in the November issue, *XYZ's* request for information pertinent to time standards for the organic finishing of metal parts, and products by spraying methods (page 92). I would like to offer my suggestions, and assistance, to *XYZ*.

In the many plants I have serviced and found "Finishing Standards" being used efficiently, together with other important procedures for controls, I have noticed a definite reduction in finishing costs with a product of the highest quality finish.

However, it is my opinion that before "Finishing Standards" are set up, there are other important factors to be considered. Possibly these are now being used, but in case they are not I am mentioning them for what assistance they can be to *XYZ*.

Obviously, "Quality Standards" are essential and should be available. To obtain AA quality it is imperative that correct procedures be adopted in setting up desired standards of specifications for the purchase, evaluation, and control of materials.

It is of extreme importance that consideration has been given to the selection and use of the correct type of materials (chemicals, enamels, lacquers, solvents, etc.). Also that procedures have been designed for the correct handling of materials, such as storage, mixing, viscosity control, film thickness desired (wet or dry) and the use and application of the materials.

Among other important factors to consider are correct baking schedules, metal and oven temperatures, selection and upkeep of equipment, installation of correct methods, good housekeeping habits, and safe and proper working conditions.

It is important that employees are properly trained. Too often in the large, as well as small plants, have I noticed that the finishing room personnel are allowed to use materials and equipment to satisfy their own desires. In many cases, they receive their instruction or are taught by some employee who had never been trained how to mix or apply materials correctly, but who for several years had been using faulty habits and then passing them along to new employees.

It is realized that in order to produce a product of the highest quality at the lowest minimum cost, the worker must have an intelligent understanding of the job he is doing. In many cases he must know not only how to accomplish a particular job, but also why it must be accomplished in a specified manner.

Finishing standards and specifications should be supplemented with an educational program along with classroom instruction in the plant, designed to satisfy the natural and desirable curiosity of the processing personnel as to why processes are accomplished in a certain manner. It should be composed with two basic ideas in mind:

1) That a person cannot be taught, but can only be assisted in teaching himself. [*Continued on page 88*]

UNITED CHROMIUM PRODUCES

all types of

Plastisols

for applying almost any way you want

You can now select plastisols to meet not only heavy duty service needs but also your production methods. Unichrome Plastisol Compounds are available for spraying, for cold dipping or hot dipping, for electrostatic spray, for slushing, knife, trowel or roller application.

And remember, a Unichrome Plastisol vinyl finish delivers unusual resistance to chemicals and abrasion . . . rich, satiny luster . . . chip and crack-proof resiliency . . . thick or thin film build-up as desired, with a single application . . . and seam-free and pore-free protection.

As a pioneer in the field of plastisol coatings, United Chromium can give you sound help in selection. Send for Bulletin VP-1.

UNICHROME **COATINGS FOR METALS**

. . . unique coatings to meet unusual requirements

UNITED CHROMIUM, INCORPORATED

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Detroit 20, Mich. • Waterbury 20, Conn.
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2) That quality must be built into a product and cannot be inspected into it.

Therefore, the purpose of an educational program is to assist personnel in obtaining an intelligent understanding of their job, so they can follow "Finishing Standards" to produce the highest quality product at the lowest minimum cost.

Finishing difficulties will always exist as long as climatic conditions, human error, and varying methods of application are not under absolute control. By close observance of certain rules, experience, and interest in doing the work carefully, there should be little difficulty with high grade proven materials.

In conclusion, it is my opinion that the following procedures should be adopted first before attempting to set up Spray Finishing Standards which can be used efficiently.

1) Set up Quality Standards.

2) Draw up specifications for purchase of materials. Use a "Label Analysis Report" for each type of paint.

"Think it's safe to send McFarland all the way downstairs with these safety leaflets?"

3) Use Control Test Report and Evaluation of Materials.

4) Set up porcedures for storage of materials.

5) Set up procedures for agitating, mixing and viscosity control.

6) Set up procedures for training in the use of correct application techniques, use and handling of the equipment.

7) Set up specifications for the desired wet and dry film thickness.

8) Standards of procedure for each type of product.

If I can be of any further assistance to *XYZ* please do not hesitate to call on me.—C. Raymond Syer, *Metal Finishing Consultant.*

"Dirt" on Our Finish

We manufacture steel kitchen cabinets which are finished in two coats of synthetic white enamel and baked in a continuous oven.

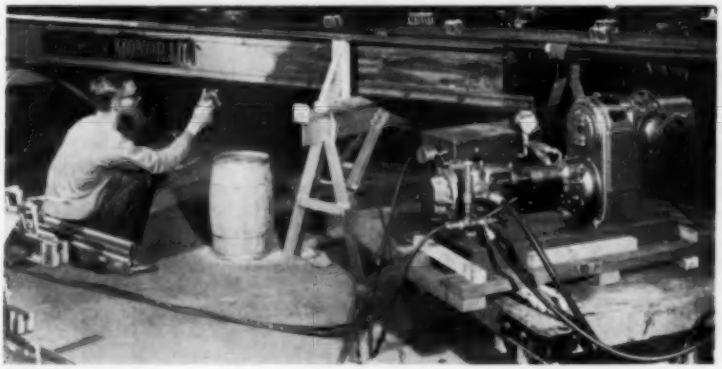
Our entire paint area is pressurized and has a good "spill-over." We do a fairly good job of trying to keep the place clean. We do quite a bit of preventive maintenance, and strip a section of our chain hooks each night.

Despite all of this, we are frequently plagued with "dirt" on our finish. We may go along for a period of two or three months with just a normal percentage of rejections due to dirt, and then suddenly, the dirt condition becomes so bad that our rejections will amount to as high as 50%.

During the past several years we have learned to follow certain procedures which tended to alleviate the condition in a matter of a day or two. At present, however, we have a very bad dirt condition, and although we have done everything we can think of, we haven't been able to overcome it.

We would like to bring in a firm or person who is possibly an expert on such problems in an effort to effect a

Is Airless Spray Painting Practical?



CUT PAINT LOSSES

INCREASE PER GALLON COVERAGE

SAVE ON SOLVENTS

REDUCE HEALTH HAZARDS

MAINTAINS UNIFORM VISCOSITY

ADAPTABLE TO FIT YOUR NEEDS

PRACTICAL?

IT'S HERE AND IN USE!

The Bede Airless Atomization Paint Spraying System illustrated above is located at the American Monorail Co., Cleveland, Ohio.

You'll note the absence of spray booth, special hoods and protective clothing. Work goes on as usual in the background. The combined use of Bede Airless Atomization equipment and Bede Paint Heaters has saved American Monorail many dollars in handling costs alone.

Spray it on the spot and save. Let us demonstrate what Bede Products can do to lower your finishing costs.

WRITE FOR CATALOG ON REVOLUTIONARY NEW AIRLESS SPRAY PAINTING PROCESS . . . *IT'S NEW*

BEDE PRODUCTS CORPORATION

HOT SPRAY AND AIRLESS INDUSTRIAL FINISHING EQUIPMENT

JACKSON ST. AMHERST 44-711 AMHERST, OHIO
DEPT. U. S. A.

solution. If there is such a firm or person available, kindly favor us with the name and address.—*M. Prods.*

It sounds to me as if he is getting his dirt from the conveyor chain. In the second paragraph of his letter, he mentions that they strip a certain number of hooks each night. He says that later, they run for a certain period with few rejects due to foreign matter contacting freshly coated surfaces of the product; then, they run into a period where rejects increase to 50%. I am wondering just what they do to reduce the number of rejects to make the pendulum swing back to a few.

It could be that if the hooks accumulated overspray, the conveyor chain or cable as the case may be, also accumulation of dried paint, there are lated paint increases and dries, it flakes off due to vibration of the moving chain, and drops on the freshly coated work. They should check the conveyor chain and if it has an accumulation of dried paint, there are two methods of solving this problem. One is to install a stripper tank through which both the chain and hooks pass on each trip. This tank should be installed between the unloading and loading stations. If this is done, they will have to install automatic chain and trolley wheel lubricators as the stripping material and hot water rinse will remove the oil from the chain and the wheels. Several concerns make stripper tanks. Automatic chain and wheel lubricators are also available.

The other method to keep the chain clean is to buy an extra section of chain, say 60-ft. or 80-ft. long, and each night, or twice a week, or once a week, remove a section of the conveyor chain and replace it with the clean section, then strip the section removed. How often this will have to be done will depend upon the quantity of overspray contacting the chain.

This is the best I can do with so little information. If it is a question of air make-up, there are several concerns that can take care of it. If they will write me in detail and explain their setup, and just what they do when rejects mount to bring them down again, perhaps I could be more specific.—*P.C.B.*

Fight Polio in '55!

Join the
MARCH OF DIMES
January 3-31

Our "Sample" Economy

In two articles of recent vintage namely, "Industrial Paint Sample Business—Big Deal" (Sept. 1954) and "Paint Users Tests: Be Fair; Get Results" (Nov. 1954), the subject of paint samples received an interesting discussion. However, having been in the job finishing, manufacturing and sub-contract manufacturing fields prior to being connected with industrial paint manufacturing, the writer feels that some very pertinent points have been overlooked.

It is agreed that the industrial paint sample business is fantastically high and, in many cases, unnecessary. It is also agreed that, in many cases, proper evaluation by the user's laboratory is an important aspect, but that only pertains to large manufacturing plants which have industrial finishing laboratories.

What of the countless thousands of plants in the small manufacturing, sub-contract manufacturing, and job

finishing classifications? These plants do not have and are not equipped to give laboratory evaluation to every sample, yet they are considered by any industrial finishes manufacturer, as a worthwhile account, based on the total gallonage consumed. What procedure then should these plants adopt relative to paint sample requests?

It would be impossible to estimate the number of sales representatives calling on these particular plants every week. Naturally, each man proclaims the virtues of his particular product. A purchaser in this category is also striving constantly to improve his process and thus improve his own business. So, in order to give each salesman a chance, he requests a sample. It may very well be that at the time, this particular customer had a possible use in view.

It must now be understood what can occur after a sample has been requested. If the particular sample is needed for a sample to be sent to the industrial finisher's or sub-contract manufacturer's customer and, as so often happens, the paint sample takes a long period to arrive, there may no longer be any use for that sample. Certainly the paint manufacturer's laboratory is not to blame. They are probably over burdened with these experimental batch requests. On the other hand, the industrial finisher cannot be blamed. He has had to meet a deadline of his own.

The condition also arises, in the majority of instances, where the industrial finisher has given the paint sample a production test and found that the product he is currently using is equal to or better for his purpose than the sample material submitted. We cannot condemn the salesman for his confidence in his own product, but we also cannot condemn a finisher for not wanting to switch suppliers when seemingly there can be no improvement. This could be considered statistically as a wasted and unnecessarry sample.

Another case which warrants consideration is that of the job finisher. This is normally a day to day business and it is impossible for him to predict in advance what sample finishes he will be asked to produce. His only means of being in a position to comply with his customers' requests is to have innumerable paint samples on hand. It is quite obvious that stocking drums or kits of material for this purpose would not be feasible. In many instances the paint salesman will be informed that his sample will be put only to such emergency use. Statistically this also may be counted as a wasted sample, yet in the long run considerable business could be developed. Many manufacturing subcontractors are in the same position as the job finisher in regard to customer samples.

All too often even the largest manufacturers request paint samples for a new product, but the supreme judge of them all—the retail purchaser—rejects that product for reasons other than finish. Thus the manufacturer's time spent for testing these sample paints is wasted and, of course, the paint laboratory's time has been wasted. This has happened on countless numbers of occasions in automobiles, air conditioners, etc.

It must be agreed that many paint samples are unnecessarily produced, but it should be noted that our industrial economy is based on sample production, as witnessed by the thousands of model homes produced yearly by builders, test automobiles, etc. These are far more costly than paint samples. The average reader has undoubtedly visited many showrooms before purchasing an automobile or a home, yet he is not expected to buy every one he sees.

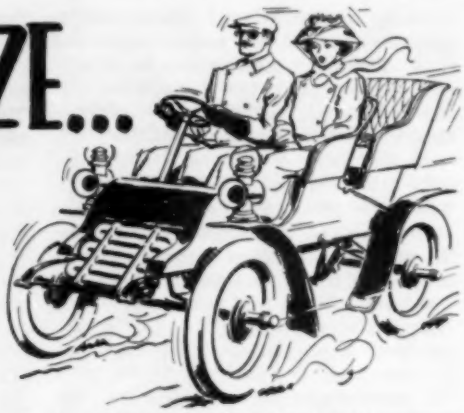
Two wrongs do not make one right but, without doubt, one can find that

MODERNIZE...

USE

Electro-Cold STRIPPER

NON-INFLAMMABLE
NON-INJURIOUS



Removes hard baked-on enamels, primers, wrinkles, hammers, synthetics, japans, and 3M Scotchlite in seconds in most cases, and minutes in others. *The finish literally pops off!* There's no delay in getting metal items back in production when ELECTRO COLD STRIPPER is used.

It is safe, non-inflammable and requires no heat. Used by leading industrial concerns and Government agencies. TRY IT!

Write for samples—or order 5 gallons at drum price.

ALLIED FINISHING SPECIALTIES CO.
2641 W. GRAND AVENUE • CHICAGO 12, ILLINOIS

the paint manufacturers have many hundreds of resin, plasticizer, etc. samples setting on their own shelves with little or no immediate chance of proper evaluation.

Some reduction of experimental batch orders can be made but it is doubted if this could materially affect the overall situation. Samples, like advertising, are important functions of our business economy.—*Norman I. Gaynes.*

Harold R. Johnson of Naz-Dar Dies

The death of its senior salesman, Mr. Harold R. Johnson, is announced by the Naz-Dar Co., Chicago.

Mr. Johnson joined the Naz-Dar Company on February 4, 1940, and continued with the company until his death with the exception of 2½ years on active service with the Marine Corps in Korea.

The loss of Mr. Johnson is keenly felt by all members of the Naz-Dar Company, and among his many friends in the silk screen trade.

N. Y. University Offers Courses In Finishing

Two courses in surface technology will be offered during the 1955 spring term at New York University's Division of General Education.

Fundamentals of Paint, Varnish and Lacquer Technology will present the basic principles of the manufacture and application of paint, varnish and lacquer products. Topics to be discussed include protective, decorative and functional coatings, raw materials used in organic coatings, manufacture of organic finishes, and testing methods.

Instructors will be Dr. Myron A. Coler, adjunct professor and consultant in technical studies at NYU, and technical director of the Markite Co., New York City, and Elias Singer, technical director, Troy Chemical Co. of New York City.

Sessions will be held from 8:10 to 9:55 p. m. on Wednesdays, February 9 to May 25.

A seminar on New Developments in Organic Finishes will also be conducted. Lecturers will be Dr. Coler, Mr. Singer and Sydney Lauren, research chemist with Johns-Manville Corp. The course will meet from 8:10 to 9:55 p. m. on Tuesdays, February 8 to May 31.

Register at the Division of General Education, New York University, 1 Washington Square North, New York, N. Y., from January 24 to February 11.

Division Of Enthone Changes Name

Enthone, Inc., manufacturer of chemical products for metal finishing, announces a change in the name of its division formerly known as Conn. Metalcraft, Inc. The new name will be Comco, Inc.

This corporation has been engaged in the design and manufacture of plating racks, fixtures, filters, plastic tanks, ventilating ducts and in the sale of general equipment for the electroplating industry.

Comco, Inc., is located at 442 Elm St., New Haven, Conn.

Meeting in Los Angeles— March 28-April 1

Twenty-four technical societies are cooperating with the American Society for Metals in sponsoring the Ninth Western Metal Congress and Exposition in Los Angeles, March 28-April 1.

The Congress will be held in the Ambassador hotel, and the Exposition in Pan-Pacific Auditorium—largest exhibit building west of Chicago.

American Society for Metals, American Foundrymens Society, American Welding Society, Industrial Heating Equipment Association, Society for Nondestructive Testing and others will hold sessions as features of the Congress.

Edgar C. Buckingham, cooperating societies chairman of Los Angeles Chapter ASM, and field service engineer, Pacific Scientific Co., Los Angeles, may be contacted for further information about the societies cosponsoring the Show and Congress.

Devoe & Raynolds Holds Regional Sales Meetings

It's Bigger Than You Think was the theme of four regional sales meetings in New Orleans, Chicago, New York, and Boston, attended by the sales force of Devoe & Raynolds, Co., Inc. At these meetings the sales personnel were briefed on Devoe's merchandising, advertising and sales promotion plans for the coming year.

Mr. J. Harold Kolseth, executive vice president of Devoe, spoke of the growing importance of color in the merchandising of paint, the new and growing markets, and the extensive spring advertising program.

Representatives of the main Devoe laboratory in Louisville participated in the meetings, and gave demonstrations of new products being introduced, including the new vinyl masonry paint for exterior use. This paint has excellent qualities of adhesion even to such surfaces as asbestos shingles. It has both durability and color retention.

AGATEEN

AGATEEN LACQUER No. 2B

A Jeweler's Clear Lacquer for all precious metals. Engraves without feathering, shearing, cracking, chipping or flaking. Used by the country's leading manufacturers of buckles and men's jewelry.* Famous for ADHESION, DURABILITY and MILEAGE.

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No Samples.
Minimum orders accepted.

Agate Lacquer Mfg. Co., Inc.
Serving industry since 1927
11-13 43rd Road
Long Island City, N. Y.
Stillwell 4-0660-1

AGATEEN
THE LAST WORD IN QUALITY

NEW PAINT STRIPING IDEA... *Works Faster, Easier, Better!*

MASTER PAINTERS' STRIPING TOOL
Easy to Use as a Fountain Pen

Men in every branch of industry now rely on Master Painters' Paint Striping Tools to aid in turning out cleaner work in a fraction of the time and with a fraction of the effort.

This amazing tool paints straight or curved lines with equal facility. No smears or smudges. Uses any kind of paint, enamel or lacquer. Newest model paints DOUBLE parallel lines . . . wide or narrow or both —*with one operation*. Does a big job in large or small shops.

Write for PICTURE FOLDER with prices and descriptions — all sent FREE.

USE FOR STRIPING

• Furniture • Wallboard
• Toys • Bicycles • Signs
• Scoreboards • Ceramics
• Lampshades • Autos

—anything and everything that requires clean, accurate striping with paint, enamel or lacquer.

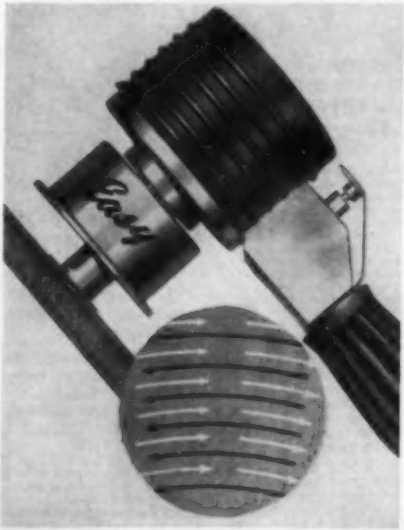
FREE ENGINEERING SERVICE
If you have any paint striping problem, our staff of experts will be glad to cooperate with you. No cost or obligation.

WENDELL MFG. CO. 4234 N. LINCOLN AVENUE Dept. 91 CHICAGO 18, ILL.

Two Sanders in One— A Rougher and Finisher

An entirely new type of sanding machine is announced by the Detroit Surfacing Machine Co., manufacturers of the line of pneumatic and electric Detroit Easy Finishers.

The Model D. A. Dual Action Sander is a completely new type of air powered sander that is really two units in one, each unit operating with a dual action.



This new sanding action moves in two directions at the same time, turning 6000-R.P.M.'s to the right, and at the same time moving in a fast reverse action to the left.

Outstanding results claimed for this entirely new sanding action are much faster cutting and important savings in abrasives (sand) paper. Even when sanding lacquer, surfacer, solder (hot or cold), plastics and other materials that quickly load, the abrasive life with the D.A. is up to 90% longer.

A simple device known as the shift ring, instantly converts the unit to a high-speed "off center" spinner. The off-center action reduces normal abrasive swirls to a minimum, enabling workmen to actually polish steel as well as non-ferrous metals.

The Model D.A. is air-powered. Weight is approximately three pounds. The Dual-Action counteracts torque, therefore is extremely simple to use and easy on the operator.

For literature on this new Model D.A. Dual Action Easy Sander, write Detroit Surfacing Machine Co., 1333 E. 8-Mile Road, Detroit 20, Michigan.

Portable Paint Heater

A strictly portable paint heater has been developed by Dualheet, Inc., 3350 W. 137th street, Cleveland 11, Ohio. It is known as the Hot Rod, and is a steam transfer paint heater equipped with a protective holster for fastening to the operator's belt for hand free operation. It weighs only two pounds.

This heater requires no electrical connections, has no moving parts, and is easily cleaned for color changes. It is ideal for use on large equipment, or for maintenance painting.

For more information, write the company.

Ultrasonics for Inspection and Cleaning

The Met-L-Check Co., 11919 S. Western Ave., Los Angeles 47, Calif., has applied ultrasonic vibration to its visible penetrant inspection method with startling improvement in speed and effectiveness.

The ultrasonic equipment is compact, moderate in price, and simple in operation. It can also be used for general surface cleaning when the ultimate in soil removal is desired for plating, painting and other processing.

High speed vibration greatly accelerates penetration, water washing to remove excess penetrant dye and development of flaw indications.

It is expected that ultrasonics may make penetrant inspection the No. 1 inspection method for all non-porous surfaces of metal, ceramics, glass and plastics.

New Hot Spray Device

Hot spraying of paint, microcrystalline waxes, thermoplastics, anticorrosive compounds, and similar materials, which melt in the range between 175° and 400°F., is a simple and practical operation with the Roxon Volumaire Model R350 spray gun. Based on a new principle, Volumaire *atomizes by air volume rather than by air pressure.*

For hot spraying, air is supplied by the Volumaire R350 Turboblower at 3500-cu. ft. per hour and 1½-lbs. per square inch pressure, heated to the melting point of the material. An electrical resistance heater in the spray gun container holds the material at the approximate spraying temperature. The entire outfit is portable.

Hot-sprayed material reaches the work surface borne by and followed by hot air, hence has the time to penetrate, adhere, and establish a uniform sealed surface coating before normal temperature loss causes resolidification.

Spraying by air volume at only 1½-lbs. per square inch pressure results in the delivery of the material to the surface being sprayed with minimum backspray and offspray. This system results in economy of material, low operating cost, clean work areas, high labor output and a minimum of masking.

This equipment is a product of Roxon, Inc., 50 Broad St., New York 4, New York.

Monoflo "Screw" Conveyor

Basically, the Monoflo conveyor consists of a flexible high carbon steel screw approximately ¾-in. in diameter which turns in a metal retaining rail. The top of the rail is open to permit exposure of the screw. When a load carrying hook is placed on the rail, the thread of the screw immediately engages the hook and propels it along the rail.

Loads can be placed on the conveyor and removed from it at any point along its path. Items allowed to travel the full length of the conveyor can be easily transferred to another conveyor or can be accumulated on a gravity storage rail. Movement of the

BOOKS On Finishing Available

"MODERN ORGANIC FINISHES—Their Application to Industrial Products" (452 pages) new	$8.50
"ORGANIC COATING TECHNOLOGY," Vol. 1	10.00
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"THE MIXING OF COLORS AND PAINTS" (292 pages)	3.00
"WOOD FINISHING" (361 pages)	3.00
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"PAINT FILM DEFECTS — Their Causes and Cure" (544 pages)	12.00
"INDUSTRIAL SOLVENTS" (764 pages)	12.00
"FINISHING MATERIALS AND METHODS" (320 pages)	4.00

Cash Must Accompany Order—
Send for Descriptive Circular

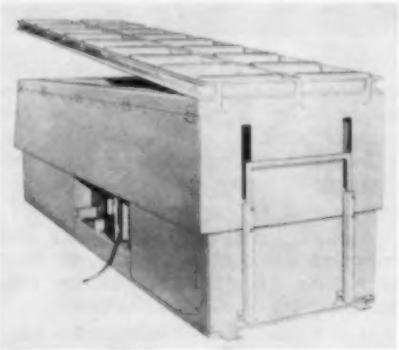
INDUSTRIAL FINISHING
1142 N. Meridian St. Indianapolis 4, Ind.

load is smooth and steady and the conveyor is practically noiseless.

Due to its one-way construction, Monoflo does not require an idle return loop. This feature, combined with its basic simplicity results in an extremely compact unit requiring a minimum of room. . . . It is a product of M-H Standard Co., 515 Communipaw Ave., Jersey City 4, N. J.

Conveyorized Lifting Table

Union Tool Corp., Warsaw, Ind., announces a new conveyorized elevating table designed to handle long sheets of material being fed into a shearing operation, a blanking press,



Conveyorized feed table for heavy sheets.

roller coater or other machine where size of the sheet presents a problem. This new machine has a roller conveyor type top 40-in. wide x 144-in. long, hinged at one end to permit raising the opposite end a maximum of 18-in. Ratchet type stops permit raising this end of the conveyor table top in increments of 3-in., from 0-in. to 18-in. It is motor powered.

The load capacity is 12,000-lbs. Other sizes of the machine are available on request.

Functional Finishes!

If you require your coatings to accomplish some specific task — something beyond mere ornamental appearance or average longevity . . .

We make ACRYLIC, ALKYD, CELLULOSIC and VINYLOID coatings for a very wide range of specialized industrial applications.

TRY US!

• THE VARNISH PRODUCTS COMPANY
5206 Harvard Avenue, Cleveland, Ohio

Powder Rust Remover

An effective non-toxic rust remover in powder form is being produced by the By-Buk Co., 4314 W. Pico Blvd., Los Angeles 19, Calif.

Transportation and handling costs are considerably reduced by adding water at destination. The strength of the resulting liquid rust remover can be controlled to meet any derusting or corrosion removing requirement for ferrous or non-ferrous metals. It is non-toxic, non-obnoxious, non-flammable, leaves no alkalies and requires no neutralizer. Action is much faster on non-ferrous metals.

For vertical surfaces and large objects, such as machinery and structures which cannot be submerged in a liquid bath, a thickening agent is added to the liquid to make a syrupy substance which will adhere to such surfaces. For additional information, write the company.

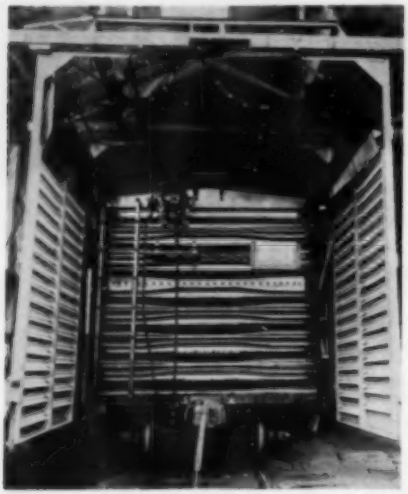
Drying Paint on Ry. Cars

An example of infrared drying of paint or railroad cars, following spray painting, is cited by Corona Mfg. Corp., 5210 San Fernando Road, P. O. Box 669, Glendale 3, California.

A leading producer of railroad rolling stock installed, in its car shops, a self-propelled paint drying oven equipped with Corona infrared "Pyrex" tube heaters in which a box car's painted surface is dried very quickly. This gives the paint a hard baked finish and the paint stays in condition much longer, eliminating frequent returns to the shop for maintenance.

Length of oven is 8-ft.; width, 11-ft.; and height 12-ft.

According to the company, selection of this particular heater was made because the surface of the tube itself remains relatively cool, as Pyrex has excellent transmission properties. This



characteristic reduces fire hazards and permits location of the heater closer to the work without danger of hot spots. Closer placement is important because infrared intensity varies as the square of the distance. If the distance is halved, the intensity is multiplied four times.

Non-Staining Masking Tape

White or pastel colored surfaces, which are so susceptible to residue and discoloration left by masking tape, come through finishing operations clean and unmarked by a new tape especially developed for this application.

Called "Behr-Cat No. 115 Stain-Resistant Masking Tape," it is best suited for use on light colored finishes like those on refrigerators and deep freezers, kitchen stoves and cabinets, washing machines and pastel colored automobiles.

Made with a flexible crepe-paper backing, it will adhere equally well to contours and to flats. No wetting or preliminary treatment is necessary because the adhesive is pressure sensitive.

The tape is available in 60-yard rolls, either boxed or in bulk, and in widths ranging from ¼ to 3-inches.

For further information and prices, write Behr-Manning Corp., Troy, N.Y.

Filter Units Developed For Electroplating Solutions

Comco, Inc., Division of Enthone, Inc., 442 Elm St., New Haven, Conn., formerly known as Conn. Metalcraft, Inc., announces the manufacture and sale of a new series of cartridge type filter units designed especially for electroplating and electroforming industries.

The units are available in a variety of models ranging from 100 gallons to 5,000 gallons or more per hour. They may be had in iron, stainless steel, rubber, and plastic for use with all types of corrosive solutions. The units are easy to assemble and disassemble. Cartridges woven with a variety of fabrics to withstand solutions can be used, including cotton, dynel, orlon, glass, acetate and nylon.

An illustrated brochure describing these units will be sent upon request.

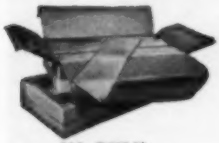
General All-Purpose Adhesive

Flintkote No. 717, a new, general purpose rubber and resin solvent cement, has just been introduced by the Industrial Products Division of the Flintkote Co., 30 Rockefeller Plaza, New York 20, N. Y.

The new cement, red in color, may be used for bonding a wide variety of light weight materials to wood, metal, masonry, glass, rubber and many plastics. It is especially designed to adhere light fabrics, felts and insulation materials.

For Dust Free Finishes!
BOND TACK CLOTH

IN ROLLS
Cut off any size piece to use as needed.



IN BULK
Cut and folded. Ready to use.

STAYS SOFT AND TACKY
A SPECK-FREE FINISH EVERYTIME

Now Available in Rolls or Cut Bulk—White or Gold.
In Three Different Types of Cloth

Get your Tack Cloth packed just the way it's easiest for you to use . . . either in 150 yard rolls of 36" wide cloth or in handy cartons . . . 100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up!

The Cut Bulk size is 18" x 36" . . . folded to 4½" x 18" for ease of handling. ALL BOND TACK CLOTH is **Spontaneous Combustion Proof, Lint-Free** and **Wax Free.** Gives a sparkling speck-free Finish **every time.** Clean and sanitary. No waste.

TRY THEM and COMPARE RESULTS.
Samples Gladly Sent Upon Request.

BOND CHEMICAL PRODUCTS CO.
"The Tacky Wiper Specialists"
2641 N. CLYBOURN AVE. CHICAGO 14, ILLINOIS

Also Individually Packed in Glassine Envelopes—144 to the Carton

A Warranty of Satisfaction in Every Carton

Ready-Mixed Gold

This is a new product just announced by Duralac Chemical Corp., Newark, N. J. It is offered as a ready-made solution to the problem of mixing bronze powder in vehicle. This development comes in all bronze powder shades and is suitable for spraying or dipping.

It can be air-dried or baked, and has a versatility that makes it applicable to aluminum, steel, cast iron, polystyrene, acrylic and other plastics. It is also available in clear for users preferring to incorporate their own powders.

Laboratory Stirrer

Eberbach's new 3-speed stirrer offers laboratories the "hollow handle" and continuous light duty operation at 500, 750 or 1000-r.p.m. The 1/50-hp. split-phase induction motor develops 4-inch-pounds torque. Stirrer is driven by V-belt on 3-step pulleys.

Write for Bulletin No. 490 from Eberbach Corp., Ann Arbor, Mich.

Automatic Viscosity Control

The Norcross Viscometer is widely used in many different industries.

This automatic control system is particularly suitable for applications where a volatile solvent is used so that normal evaporation causes the viscosity to increase. Typical applications of this type are painting by spraying, dipping and flow coating, impregnating, coating, and sizing. The same system can of course be used to blend any two or more solutions to obtain a desired viscosity.

Further information can be obtained from Norcross Corp., 247 Newtonville Ave., Newton 58, Mass.

FLOW COATING BOOK

Mr. Zahn, the author of "Flow Coating", says that any product which can be dipped or sprayed can be finished by the flow-coat method. His new book contains 296 pages 5¼x7¾-in.; 13 chapters.

The great range in new kinds of solvents now available, plus phenolic-base resin paints and vinyl type paints which have been so successful in the flow-coating method of application, presents endless possibilities for profit. The industrial user can now afford to pay a little more for better materials and profit by a higher quality product.

"Flow Coating" explains the various industrial painting methods such as: dipping, spraying, electrostatic, steam, roller coating, centrifugal, hand spraying, automatic dip and many others. Direct comparisons between flow coating and these methods are dealt with in detail.

Mr. E. A. Zahn has spent 25 years in research on industrial paints and application methods. He is the inventor of the Zahn Viscosity Cup, and has acted as consultant to many manufacturing concerns. In 1938 he received the Charles A. Coffin award for contributions made to the electrical industry. Mr. Zahn has been associated with General Electric for 25 years and is at present Organic Finishing Engineer at General Electric's Appliance Park, Louisville, Ky.

Price $6.50—Money Back Guarantee

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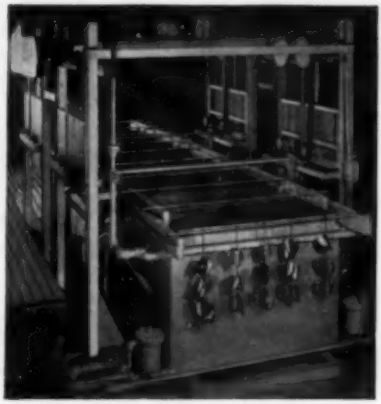
1142 N. Meridian St. Indianapolis 4, Ind.

Automatic Transfer System Over Series of Tanks

The automatic transfer unit is a transfer machine that automatically lifts and moves racked parts progressively from tank to tank at a preset timing interval. In each transfer, parts are exposed to the air only 14 seconds.



The unit is adapted to the processing of metal parts for painting, dip coating, stripping, cleaning, etching, etc. Units can be supplied with practically any number of tanks and any desired timing cycle. The machine can be arranged to skip tanks, which permits processing articles of different metals such as steel, brass and die castings without changing solutions. The time control is adjustable from 10 seconds to 20 minutes.

Literature will be sent upon request: Belke Mfg. Co., 947 North Cicero Ave., Chicago 51, Ill.

Corrosion Resistant Primer

LockPrime, a corrosion resistant liquid primer for new or corroded steel surfaces, has been developed.

Applied by brush or roller directly

DUAL CHANGE PAIL TUMBLER

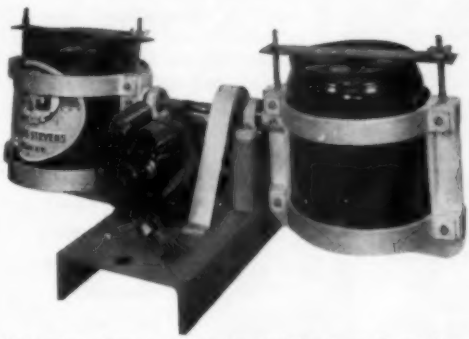


Illustration shows machine for tumbling two five-gallon round cans. Smaller machines are made for tumbling round or square gallon containers, and larger ones for fifty and one hundred-ten gallon drums.

Here is a compact and economical machine for tumbling round and square cans. Containers are placed in a sturdy aluminum cradle and held by a strap across the top, secured with two wing nuts. Cradles are made to fit either round or square containers, extra ones being supplied for small additional cost.

This pail tumbler is recommended for remixing of pigmented paints and lacquers, ageing of essential oils, blending of liquids, cutting gums with solvents—in fact, for any operation requiring constant and active agitation to bring liquids, or liquids and pigments, into closer relation.

A must machine for every factory and laboratory.

Further details and prices on request.

THE VOL-U-METER CO., P. O. Box 54, Buffalo 16, N. Y.

from the can, it offers excellent resistance to under-cutting by corrosion when cover coats are mechanically damaged.

Applicable to all ferrous metal surfaces, tile red LockPrime contains 28% solids, and covers 200-sq. ft. per gallon per 1 mil film thickness. Since the bond of strength increases with age, immediate application of top coat is unnecessary.

Specifications and directions upon request to Pennsylvania Salt Mfg. Co., 1000 Widener Bldg., Philadelphia 7, Pennsylvania.

Plastic Metal "Putty"

A new putty-like material consisting of fine steel powders and a strong plastic has been developed by the Chemical Development Corp., Danvers, Massachusetts.

Called "Devcon," it can be used as a filler and patching material for metal surfaces. It is easy to use as modeling clay. No heat or pressure is required. After the desired shape has been formed, it becomes a strong, tough and rigid metallic piece in about two hours. It can be sawed, drilled, tapped, threaded and ground with conventional metal working equipment.

New Type Filter Prevents Air Line Pressure Drop

Airlenco, Inc., 198 Wayne St., Mansfield, Ohio, announces the production of a new type "Dual Duty" filter which prevents pressure drop in air lines as well as removing moisture and oil. This filter, when installed in an intermediate position or at the end of an extended line with a check valve, provides an adequate air sup-

ply in spots which previously were affected by a pressure drop.

In operation, the "Dual Duty" serves as a combined auxiliary receiving tank and an efficient filter. A 1-in. drain is provided at the bottom of the outer cyclinder for the removal of accumulated moisture and oil, and the entire unit is mounted upon an angle iron welded stand.

Pressure-Contact Spray Painting Machine

Conforming Matrix Corp., Toledo Factories Bldg., Toledo 2, Ohio, has developed a pressure-contact spray painting machine. It is designed for painting areas up to 3-in. x 1½-in.

The spray gun is adjustable to several positions. The object to be painted is placed in the mask, and the table top is depressed about ¼-in. which starts the painting operation. A timer controls the length of time the gun is open so that every piece receives the same quantity of paint.

Doctor Blade Test Applicator

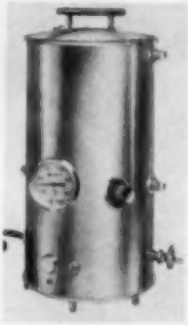
If you have frequent need to apply, to some test surface, a wet paint film of a specified thickness, then you may be interested in the Gardner Ultra Applicator.

This new instrument is particularly useful in laying down test films of plastic coatings or similar materials such as paints, varnishes, lacquers, adhesives, or the like, for various types of comparative tests and analyses such as those relating to color, opacity, weather-proofness, durability, impact resistance, hardness, adhesion, etc.

For further information, or a copy of 4-page illustrated Bulletin No. 155, communicate with Gardner Laboratory, Inc., Bethesda 14, Md.

Laboratory Water Heater

Announcement is made of a new aid for laboratories that require hot distilled water. This heater keeps the water on tap for instant use. The water is maintained automatically at any pre-determined temperature by means of an adjustable thermostat.



Heats water for laboratory use. Supplied with cord and switch.

This 1½ gallon capacity heater not only saves time and bother of heating beakers, but also maintains the desired temperature level. Dial type thermometer 30° to 240° F. is temperature range. Supplied with cord and switch. Heating unit 650 watts.

Further information available from Barnstead Still & Sterilizer Co., 128 Lanesville Terrace, Forest Hills, Boston 31, Mass.

Corrosion Resistant Paint For Red Hot Surfaces

Sili-Kool is the name of a heat and weather resistant paint that has been developed for hot surfaces.

Formulated of silicone and atomized silver aluminum, this paint will resist up to 1600° F., while repelling rust and corrosion under severe weather conditions.

Tests show that one coat of this paint will protect hot stacks, boilers, steam pipes, diesel and gas engines,

THINNERS

LOW COST!

- ASK FOR QUOTATIONS
- FORMULATED TO MEET ANY SPECIFICATION
- QUALITY AND UNIFORMITY GUARANTEED

Specialists in Thinners for

- Leather
- Metal Etching
- Polystyrene Plastics

Shipped in Tank Cars, Tank Wagons, Drums or 5 gal. Cans

Synthetic Reducers and Retarders

Write or phone for technical information. Prompt service and deliveries.

ELL-BEE CHEMICAL COMPANY, INC.

Hanover, N. J. Phone WHippany 8-0194 WHippany 8-1277

WATER WHITE LACQUERS & SEALERS HIGH SOLIDS AND NON-YELLOWING

for: — **MODERN FURNITURE**

and all light shades

- LOW COST
- COLD SPRAY
- VARIOUS SHEENS
- EXCELLENT BUILD
- MAR RESISTANT

exhausts, manifolds and mufflers for more than a year.

For more information write C. H. Dragert Co., P. O. Box 5092, Dallas, Texas.

Hand Sanding File

A new sanding file set for cutting and smoothing welds, burrs and metal surfaces is announced by Diamilite Mfg. Co., 2301 Main St., Santa Monica, Calif.

Nine point diamond hard abrasives are triple coated on chip board tubes, using a new fuse bonding process to make the sanding files. These tubes are 10-in. long and 1-in. round or 1-in. square to slip on to a 14½-in. handle. Tubes of various grit sizes are interchangeable on the handle and are locked in place by means of a screw wedge in the slotted wood.

The fuse bonding process permits washing out metal filings without harming the abrasive surface; it is impervious to most acids, oils and detergents. Standard grit sizes are 36 (coarse), 60 (medium) and 120 (fine); other sizes available.

Surface Treatment for Aluminum

Proseal No. 16, a chromate conversion protective coating for aluminum and aluminum alloys is announced. It inhibits corrosive action between paint and aluminum, meets requirements specified in MIL-C-5541 for military aircraft applications, and is designed for use on any application where extruded, forged, wrought or cast aluminum and its alloys are used.

For further information write Promat Division, Poor & Co., 851 Market St., Waukegan, Ill.

REPRINTS AVAILABLE

"Industrial Paint Samples 'Big Deal'," price 10 cents per copy.

"Force Drying Wood Finishes", price 10 cents per copy.

"Cleaning and Conditioning Metal Surfaces for Coatings", price 20 cents per copy.

"A Half Decade of Finishing Progress," price 10 cents per copy.

"Tumble Finishing," price 10 cents per copy.

"Flow Coating as a Means of Paint Application," price 10 cents per copy.

"Stirring and Straining," price 10 cents per copy.

"A Method Engineer Analyzes Paint Selling," price 10 cents per copy.

"Preparing and Painting Metal Specialties", price 10 cents per copy.

"Flock (What it is, its appearance, its uses both for utility and decoration)", price 10 cents per copy.

"Filler, The Theory and Technique of Application", price 10 cents per copy.

"Finishing System for Magnesium", price 10 cents per copy.

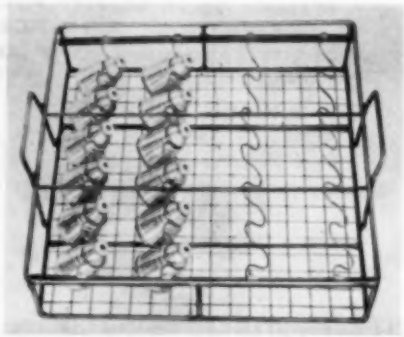
"Rapid Electrostatic Finishing", price 10 cents per copy.

INDUSTRIAL FINISHING Magazine

1142 N. Meridian, Indianapolis 4, Ind.

Degreasing Basket

One of the several types of degreasing baskets designed and made by Wiretex Mfg. Co., 40 Mason St., Fairfield, Conn., is shown in the accompanying picture.



Hold parts as you want them positioned.

Replaceable aluminum wire holders are shaped to support the metal parts in correct position for cleaning and draining, and to prevent the parts from touching each other.

After cleaning operations, parts can remain in these baskets to be safely transferred to the next station. The basket prevents scratching or denting of precision parts. Empty baskets stack neatly for return to the loading station.

Safety Containers

How do you handle your flammable materials, oily rags and waste, solvents and thinners? Oily waste cans of 6 to 40 gallons capacity are available with hinged lids.

For temporary storage of solvents and thinners in the plant there is a 5-gallon safety can with self closing faucet.

For cleaning and sponging operations, and in the wood finishing rub-

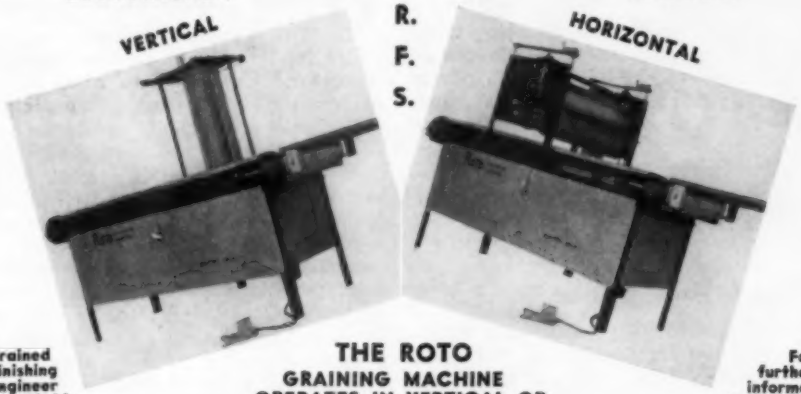
ECONOMICAL

VERTICAL

R.
F.
S.

EFFICIENT

HORIZONTAL



Trained Finishing Engineer available to supervise installation and initial finishing problems.

THE ROTO
GRAINING MACHINE
OPERATES IN VERTICAL OR HORIZONTAL POSITION.

Wherever graining or similar patterns are required on either flat stock or complete assembled units the Roto Graining Machine is engineered to make a heretofore difficult application simple and efficient.

For further information write, wire or call Newmark 8-1778 or Newmark 8-6691

ROTO FINISHING SYSTEMS 1105 EAST GLENCOE AVENUE COMPTON, CALIFORNIA

bing room there is a plunger can for solvents, thinners and rubbing vehicle. Capacities range from one quart to one gallon; the plunger can be adjusted to deliver a given quantity of liquid.

For detailed information on these safety devices, ask for Bulletin 157, Gardner Laboratory, Inc., 4723 Elm St., Bethesda 14, Md.

Washes Shell Interiors

The illustration presented here shows the Currier 2-SG pneumatically operated shell washer. It is a gas fired, explosion proof washer built specifically to wash the interior of shells on a production line basis. The unit is furnished complete with all controls and safety devices and can be manufactured to wash any type of shell or tubular item.

For further information, contact the Currier Co., 710-73rd Ave., Oakland 4, Calif.

Smudge-Proof Aluminum Paint

Ever rub up against an aluminum painted surface only to have some silvery flakes rub off onto your clothing? Aluminum Industries, Inc., has developed a smudge-proof aluminum. This enamel provides a protective coating that approaches an anodized aluminum finish. It is recommended for interior or exterior use on furniture, machinery, toys or any other place where bodily contact might occur. It is also non-toxic and safe for use in nurseries.

Further information may be had by writing Dept. S-2, Permite Paint Division, Aluminum Industries, Inc., 2438 Beekman St., Cincinnati 25.

Better H-VW-M Sisal Buffs

Hanson-Van Winkle-Munning Co., Matawan, N. J., announces four major improvements in its sisal buffing wheels that make for longer wear and faster cutting. The improvements include: 1) treatment with an impregnating material, 2) new center construction, 3) improved sewing and 4) use of a stronger sisal cloth.

Tests Flexibility of Finishes

How flexible is your finish? A device is available for testing and evaluating the flexibility of paint, lacquer and enamel coatings. The instrument will test a panel up to 8x12-in. and as thick as 1/16-in.

The panel is bent through an angle of 90°. A knife blade is drawn across the panel at the bend from the small diameter toward the large diameter, with the blade held at right angles to the surface. A product of Gardner Laboratory, Inc., 4723 Elm St., Bethesda 14, Md.

Temperature Testing Material

Tempilaq° consists of materials of calibrated melting points suspended in an inert, volatile, non-flammable vehicle. Once applied it dries quickly, leaving a mat opaque coating which liquefies when the specified temperature is reached.

This material is now available in the range 113° to 400° F., in 12½° intervals, in the range 400° to 550° F. in 25° steps, and in 50° intervals from 550° to 2000° F., each indicating its specific temperature rating with an accuracy of plus or minus 1%. The material will adhere to glass and other polished surfaces.

For further information, write Tempil° Corp., 132 W. 22nd St., New York 11, N. Y.

Degreaser Cleanout Indicator

Users of vapor degreasers will be interested in the new Ramco Cleanout Indicator. Developed to save many dollars in cleanout costs, this especially designed instrument reveals the exact condition of the solvent in the degreaser. It eliminates guesswork and makes it a simple and effortless job to keep an accurate check at all times.

Calibrated for both trichlorethylene and perchlorethylene solvents, the Ramco Cleanout Indicator is easy to read, and may be carried in the breast pocket as readily as a fountain pen.

It comes complete with a performance and control chart and instructions on "How to Clean a Degreaser." Ramco Equipment Corp., 1373 Lafayette Ave., New York 59, N. Y.

Acid and Alkali Resistant

Chem-Rem is the name of an improved type of acid and alkali resistant black paint. It has excellent covering capacity, making possible one coat coverage. Greater water repellence and added luster, through the inclusion of silicone in the paint formula, are other features claimed. It can be brushed, sprayed or dipped on interior or exterior surfaces of wood, metal or masonry.

For more information, write Speco, Inc., 7308 Associate Ave., Cleveland 9, Ohio.

Davis & Davis Represent Midland Chemical Corp.

Midland Chemical Corp., Dayton, Ohio, announces the appointment of Davis & Davis, 740 N. Rush St., Chicago, Ill., as manufacturer's representative serving that area on matters dealing with special vehicles, resins and Dextran chemicals.

The firm of Davis & Davis, started in 1921 by Col. A. M. Davis and his son Edward who heads the business, will cover the states of Illinois, Wisconsin, Minnesota, and parts of Indiana, Iowa and Michigan.

CLAREMONT

WOOL FLOCK | RAYON FLOCK | COTTON FLOCK

mm . . m . . . wonderful stuff for industrial finishing!

Claremont Flock's worth checking into for linings, top surfacing, sound deadening and special types of insulation packing. Processed from quality rayon, wool or cotton, in colors, in standard or specified lengths. Why not write for samples and complete details?

CLAREMONT WASTE MFG. CO.
CLAREMONT, N. H.

CLAREMONT FLOCK
Quality-Famous

Industrial Uses of Flock Insulation; Protection

IN THE PRODUCTION of electric motors, two problems are always present—the rigidity of the stator windings, and electrical insulation.

The usual procedure is to apply coats of varnish and cure them. Apparently this has not been the best method since varnish is not necessarily the most rigid material and it does not have the best electrical insulation possible. A material had to be found that could be applied easily —one which would conform and adhere smoothly to the curved windings, and which would cure to a durable finish as well as supply insulation.

One large mid-western motor firm which is always trying to improve its product, tried several materials but none proved as successful as cotton flock. The use of flock does not interrupt the production line since the flocking operation fits into the finishing line with no trouble.

The company obtained a specially adapted flock feed hopper that would handle production quantities of flock and installed it in an area following the varnish spray station and ahead of the curing station.

As the motors come along the line, they are sprayed with varnish; immediately afterward they are sprayed with flock and then cured. Flock covers all parts of the stator windings evenly and when cured, you have a smooth, durable finish which has good electrical insulation characteristics.

Another interesting use of flock is as a binder between layers of materials. Manufacturers of luggage, for example, have found it a little difficut to adhere vinyl to paperboard and plywood and get a good bond.

(Continued on page 108)

Adhesives that adhere well to the vinyl do not necessarily adhere well to their base materials, and vice-versa. The use of flock here allows the manufacturer to use an intermediate adhesive, since the flock fibers act as a binding material.

The flock is applied to the vinyl either concurrently with the coloring material or as a separate job. In either case, the clear, unsupported vinyl is carried on a conveyor where it is automatically spray-coated with paint to give the desired color and texture. The next step is to dry the paint, and roll the material after inspection. Flocking is similar to the painting operation in that the vinyl is carried on a conveyor either under automatic spray guns, or spreader knife, or roller applicator, and then into the flocking chamber where the flock (usually cotton, due to price) is applied either by spray or by sifting. Then, the material is dried, excess flock is removed and reclaimed and the material is ready for shipment.

In this manner, the vinyl is covered on the back with millions of tiny fibers that protrude from its surface. These fibers are firmly embedded in the adhesive and, for all practical purposes, are an integral part of the vinyl.

The user can employ almost any adhesive that will stick to his base material and then apply the cut vinyl. The flock fibers stick to the adhesive and a firm bond is established.

Besides these two uses, flock can be used as a packing material on highly finished surfaces. A water-soluble adhesive is used; then the flock is applied. This treatment gives a pile finish that protects the item from dirt and from scratching. The temporary protective coating of flock can be washed off when the article is to be exhibited or used.

Actually, the use of flock for industrial applications is limited only by one's imagination. Flock manufacturers are ready and willing to help anyone with any ideas about any possible use of flock.—*R. J. Steinfield.*

Glidden Co. Appoints Bindenagel V. Pres.

Wilbur E. Bindenagel has been named vice president of the Glidden Co., in charge of the company's extensive trading operations.

Mr. Bindenagel joined the Glidden organization in 1953 as manager of trading for the Soya Products Division and became assistant general manager of the Chemurgy Division. He will continue in this capacity in addition to supervising all Glidden trading activities in the nation's commodity markets.

Mr. Bindenagel graduated from Huron College in his native state of South Dakota, and completed graduate studies at the University of South Dakota. He will continue to make his headquarters at the Chemurgy Division offices in Chicago.

New Pittsburgh Research Laboratories Opened

A new ultra-modern structure housing the basic and applied research laboratories of Pittsburgh Plate Glass Co.'s paint and brush division was officially opened at Springdale, Pa., on Friday, Dec. 10. Prior to the opening of the laboratory at Springdale, Pittsburgh Plate's basic and applied paint and plastics research operations were located at Milwaukee, Wis.

The main research building and pilot plant is a three-story concrete structure with brick facing. The new building is designed to harmonize with the firm's adjoining streamlined paint and Selectron plastics producing plant which was built following World War II.

Containing approximately 68,000 square feet of floor space, the laboratory is completely air conditioned. Headed by Dr. Howard Gerhart, the research laboratory currently has a staff of 85 chemists, engineers and assistants.

E. D. Peck, vice president in charge of the paint and brush division, said that the existing staff at Springdale would be steadily augmented as the firm plans to progressively extend its research program. Currently, more than 400 scientists and technicians are associated with the paint and brush division.

"Dedicated to the creation and experimental production of new chemical compounds, paints, varnishes, enamels and lacquers, resins and plastics, the Spring-

TOUGH FINISHING JOB?

***Specify* NEW PERIOD**

When a tough finishing job comes along, take a tip from the leaders and specify NEW PERIOD. You'll find the job becomes easy with this quality line of protection finishes.

- Fillers and Stains
- Sealers
- Lacquers — Clear and Semi-Gloss
- Lacquer Enamels — Flat and Gloss
- Synthetic Enamels

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Write for 5 Gallon Working Sample at Drum Price

MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES

Established 1917

NEW PERIOD Production Finishes

NEW YORK WOODFINISHERS' SUPPLY CO., INC.

109 Imlay Street Brooklyn, N. Y.

dale research laboratories are the world's most modern and one of the two most extensive in the industry," according to Mr. Peck.

In these laboratories, the various facets of research, new materials, new products, processes, application techniques for Pittsburgh's 16 paint and brush plants have been integrated into one basic research center.

Pancoast Will Represent Pennsalt in N. Y. Area

Mr. J. J. Duffy, Sales Manager, has announced that Mr. M. S. Pancoast will represent the Metal Processing Department of the Pennsylvania Salt Mfg. Co., in its New York territory. He will succeed Clinton S. Burhans, who retires as a result of injuries incurred in an automobile accident five years ago. His headquarters will be in Syracuse.

In his new capacity, Mr. Pancoast will handle the complete line of Pennsalt metal cleaners as well as compounds used in the Pennsalt Fos Process. Included in the cleaner lines are chemicals for cleaning all metals and for etching and treating aluminum. The Fos line includes Foscoat chemicals used for cold extrusion and Fosbond chemicals used for paint bond.

Chainveyor Division Sold

Sale of the Chainveyor Division of the United States Spring & Bumper Co., Los Angeles, Calif., to the Chainveyor Corp., has been announced.

The new corporation consists essentially of the former staff and operating personnel that guided its destiny at United States Spring & Bumper Co.

Mr. Patrick T. Rauen, formerly vice president of United States Spring & Bumper Co., is president of the new corporation; Loren F. Working, for many years vice president and general sales manager for another company, and more recently manager of the Chainveyor Division at United States Spring & Bumper Co., is vice president and general manager; Ames E. Arnold is secretary-treasurer; and Charles L. Long remains in charge of production.

The principle product involved, "Chainveyor," is a new, revolutionary type low cost, light capacity, fully enclosed overhead conveyor. Developed and marketed over a period of more than five years, it has rapidly gained widespread acceptance in all types of industry.

The new corporation has moved into its new general offices and production facilities at 5618 E. Washington Blvd., Los Angeles. Eastern production facilities and additional field personnel are contemplated to serve the increasing demand.

Super Sales Strategy

WEBSTER'S UNABRIDGED dictionary defines strategy as the employment of stratagem, artifice, or finesse in carrying out any project. This definition indicates that here is one of the successful salesman's chief weapons in obtaining a sale.

The question of what bit of strategy to first employ is easily and naturally answered. The skillful salesman introduces himself in a courteous, deferential manner. He avoids undue familiarity, while being pleasant and friendly. A dignified approach creates respect and interest for himself in the prospect's mind. Yes, this is indeed the first bit of finesse employed by a salesman, and its importance cannot be overemphasized.

Having succeeded in creating a satisfactory impression, the next artifice employed by the smart salesman should arouse interest in his product. He must not forget that he has withdrawn his prospect from his work and that this, in itself, is irritating. One of the oldest and most successful means of arousing the prospect's interest is to *get him to hold, touch, look at, or taste the product involved.* Despite the wide acceptance of the value of this stratagem it is surprising how little it is used.

If it is not possible to use it, then the salesman must adopt a carefully thought out question or statement which plainly indicates the value of his product to the prospect. Such a question as: "Have you looked into the question of durability of lacquers and their resistance to alcohol and heat?" should arouse immediate interest.

The tratégy here is to focus attention on a customer's main problem and suggest the possibility that the salesman has a new or better method or material to cope with it.

Another strategic approach would be to find out what is troubling the prospect in his business. *Here is a sure thing! Everyone has trouble.* Don't you think so? Well, ask yourself about you! A sympathetic ear and a tactful suggestion gains a friendly attitude everytime. A friendly attitude begets business!

A couple in a buying mood recently entered a furniture store and was greeted by a saleswoman who was so careless as to allow a cigarette to dangle from her lips as she spoke. This writer, in the same store on business, observed all this from a distance and thought, "What a stupid way to approach anyone! There won't be any sale made there." And there wasn't! A while later the writer observed the same couple in another store close to the first one. This time the couple was in a lively discussion with a friendly, pleasant fellow. Did he make a sale? You bet he did! Compare strategic approach here; the carelessness of the first salesperson to the finesse of the second.

The above incident points to another important bit of artifice, the salesperson must adopt. Approach every prospect with a confident, pleasant attitude, secure in the belief that a sale can and will be made. Exude confidence in yourself, not egotism. Avoid too much detail. *Do not be too eager, and be sure you are not overly familiar.* Sometimes we all grow careless about these things. A carefully thought out approach takes all this into consideration. Remember and use the power of suggestion; it works!

Do not fail to ask for an order when the psychological moment arrives. Perhaps bluntly or perhaps discreetly. Only the conditions of the particular occasion will dictate how to do it. After all, the salesman's job is to get an order, and having gone over all the enticing points about his product he must then conclude his

visit successfully by securing the order.

In closing, use a sensible bit of strategy. For example, should the prospect raise a question regarding the item which indicates a favorable inclination on his part, the salesman can start writing out the order as he replies. Chances are this bit of artifice will do it. The prospect is unlikely to interrupt, especially if the salesman assumes the attitude of having accepted the order.

The above is one way of closing out a sale. The writer uses it. There are, of course, many others. Only the individual's ingenuity, initiative, and imagination limit the various strategies used in closing a sale. One important matter to remember is to lead the prospect into a favorable decision without appearing to do so.

Having concluded all the business of the moment, bid the customer good day and be on your way. Do not linger once a sale has been consummated. The project has been carried out; on to the next.—*J. J. Morrison.*

Binks Free School of Spray Painting

The second class of the winter session of the Binks Manufacturing Company's free School of Spray Painting will be held at the firm's Chicago plant, February 7 to February 11.

Dates for the remainder of this session are as follows: March 7 to March 11; and April 4 to April 8.

The school is open to anyone interested in, or connected with, the industrial application of paint and coatings. Previous experience is not necessary, but in the past most members have been associated with industries or firms which use spray painting equipment.

The one-week course includes discussion of such equipment as paint circulating systems, fluid handling pumps, oil and water extractors, flock equipment, compressors and all auxiliary equipment. Class members operate the equipment, disassemble it, put it back together again, and then conduct tests to see that it is in the proper adjustment.

Defects encountered in actual production finishing are deliberately produced and the students are required to analyze the fault and then make corrections.

Instruction is given by Mr. William Beacham, nationally-known paint chemist and spray painting authority, who is also Director of the Binks Research Department. The school is housed in special quarters and makes use of the latest audio-visual aids in the instruction.

Students with similar backgrounds or problems are grouped together wherever possible. Because the class is limited to 25 students, personalized attention is given to every problem or point brought up for discussion.

There is no cost or obligation in attending the Binks School of Spray Painting. Students pay only for their living accommodations and their transportation to and from the school, located in the company's main plant in Chicago.

Because of the small size of the class, it is important that application for attendance be made as far in advance as possible. This may be done by writing to Mr. E. F. Watts, Binks Manufacturing Company, 3116-40 Carroll Avenue, Chicago 12, Illinois.

Van Siclen With The Bell System 25 Years

Mr. Howard E. Van Siclen, an engineer on wood and organic finishing, recently celebrated his 25th service anniversary with the Bell System. Mr. Van Siclen has written a number of articles on finishing which were published in INDUSTRIAL FINISHING Magazine in recent years. An article entitled, "What We Did To Cut Costs of Finishing Telephone Woodwork," appeared in the April 1953 issue.

Born in Queens Village, Long Island, Mr. Van Siclen received his Chemical Engineering degree from New York University in 1928. In 1930 he joined the Bell System, working for the Bell Telephone Laboratories until his transfer to the Western Electric Co. in 1937.

I-Sis Adds to Staff

I-Sis Chemicals, Inc., Stamford, Conn. successors to Baer Brothers Lacquer Division, announces the addition to its staff of Paul E. Hopkins of Westbury, N. Y.

Mr. Hopkins joins I-Sis in its effort to place greater emphasis on service and technical liaison between factory and customer. He brings to I-Sis over eight years experience in technical service and sales in the organic coatings field.

J. A. Hager Wins Heckel Award

Joseph A. Hager, vice president and director of the Grand Rapids Varnish Corp., Grand Rapids, Mich., well-known creators of high-quality custom finishes for industry, recently received the George Heckel Award as the man contributing the most toward advancing the paint industry in 1954.

Joseph F. Battley and J. A. Hager

Mr. Hager was selected by a committee of paint company executives, and the award was presented by the George Heckel Foundation at the National Paint, Varnish and Lacquer Association's 66th annual convention in Chicago. Association president Joseph F. Battley made the presentation.

Mr. Hager also was named a member of the association's Executive Committee, succeeding A. H. Gibson of New York City who resigned.

The association noted that "much of the progress in the industrial product finishes field is credited to Hager," who has been chairman of the Industrial Product Finishes Steering Committee for six years. He has been especially active in salesman training and in research work for producing better quality finishes.

Associated with the paint industry for 32 years, Hager has been with Grand Rapids Varnish Corp. for 30 years and has held his present position since 1944.

Glidden Company Appointments

Three new appointments to important sales posts with the Glidden Company's Chemicals-Pigments-Metals Division were recently announced by Ralph B. Quelos, general sales manager.

W. J. Barnett, former sales manager of the Glidden division's West Coast operations, has been transferred to Atlanta, Georgia. From his new headquarters there, Mr. Barnett will service and develop the southeastern and south central sections of the United States.

In the division's St. Louis territory, Russell Hyde will replace the late E. G. Schuermann as sales representative. Mr. Quelos also announced that Russell Hale has joined the firm to augment the sales efforts of W. P. Weber in metropolitan New York, and northern New York and New Jersey.

Glidden's Chemicals-Pigments-Metals Division is one of the world's leading producers of titanium dioxide, lithopone, cadmium colors and powdered metals. The new appointments result from the division's constantly expanding customer services program.

DuBois to Exhibit at Plant Maintenance & Engineering Show

The latest developments in spray booth maintenance, paint stripping, steam cleaning and phosphatizing, will be displayed by the DuBois Co., 1120 W. Front St., Cincinnati 3, Ohio, Los Angeles and New York, manufacturers of cleaning compounds for industry and institutions, at the sixth National Plant Maintenance and Engineering Show, booth 566, Chicago, January 24-27.

Some of the unique features of the DuBois display will include on-the-spot demonstrations of several DuBois booth maintenance programs, paint stripping and phosphatizing operations. Products include "Peel Filmite," the safe, opaque white, spray on, peel-off, plastic booth coating which dries in minutes and eliminates costly manhours; "Strypp-Away," the new type of heavy duty, liquid paint stripper for tough, modern finishes like epons, etc., and "Ion-Kote," phosphatizer for use on ferrous metals and also aluminum and zinc prior to painting.

The DuBois booth will be staffed by company engineers and specialists to assist in special problems and to give detailed information about DuBois programs.

Aluminum Industries, Inc. Elects Officers

The board of directors of Aluminum Industries, Inc., announces the election of J. Roshirt executive vice president, and R. Vain Bowman vice president of the Permite paint division.

Mr. Roshirt has been vice president at Aluminum Industries, Inc., since May of last year. He is a member of the Industry Advisory Committee to the National Production Authority, Society of American Engineers, American Ordnance Association, and holds a life membership in the Aluminum Association.

Mr. Bowman came to Aluminum Industries, Inc. in 1942 as director of personnel. Later he became assistant purchasing agent, and since 1952 has been general manager of the Permite paint division.

Dow Chemical Appointments

The appointment of two field representatives who will be in charge of technical assistance in the industrial uses of plastic coatings on the West Coast and in the Southeast, is announced by the Plastics Department of The Dow Chemical Company.

Roy C. Simon and William B. Guerrant

William B. Guerrant will handle coatings technical service activities in Georgia, Florida, North Carolina, South Carolina and Alabama, with headquarters in the Dow Atlanta, Ga., office. Roy C. Simon has been assigned like duties on the West Coast, making his headquarters at the company's Los Angeles office.

Naming of the two men to the newly created posts will enable the company to provide improved technical service on Dow coatings utilized by the paint, paper, building products and textile industries in each area.

Guerrant, whose home is in Danville, Va., attended the University of Cincinnati and received his B. S. degree in chemistry from the University of Virginia. He came to Dow in 1950 after serving in the research and development laboratories of the Dan River Mills, Inc., Danville, Va.

Simons is a native of North Dakota and holds a B. S. degree in education and chemical technology from North Dakota Agricultural College where he majored in paint chemistry. Prior to joining Dow in 1952 he taught science in North Dakota and Minnesota schools.

O'Brien Corp. Holds Sales Convention

The 1954 sales convention of the O'Brien Corp. was held in the Oliver Hotel, South Bend, Ind., for the central and southwestern division salesmen. Outlines were given for the company's plans in advertising, sales promotion and marketing for the coming year.

At a banquet held in the Indiana Club, two men were honored for the completion of 25 years' service with the company. Each of the men, H. F. Humphrey, Wisconsin representative, and August F. Verhostre of the South Bend sales department, received a wrist watch and a testimonial from Mr. Crowley, president.

Other speakers on the program included E. L. O'Brien, executive vice president; J. M. McCarthy, vice president of purchasing; J. C. Mull, vice president for production; J. T. Harvey, controller; Noel J. Roe, vice president for credit; G. J. DuMont, manager of the sales department; M. O. Fitzgerald, production manager; M. F. Tuite, R. T. Hatfield, Flo Ann Bennett and L. C. Mapel.

The company's advertising and sales promotion programs were outlined by Harry F. Koehler, advertising manager, and Michael F. Twomey, Jr., sales promotion manager.

DeVilbiss Spray Painting School

Progress is a most important part of the curricula of every spray painting class at the DeVilbiss Co., school of spray painting, Toledo, Ohio, E. F. Frey, director of sales promotion and advertising in the spray equipment sales division, said in announcing school dates for the first six months of 1955.

Students at the school, in addition to receiving a complete insight into every phase of spray painting, are given working previews of the newest equipment developed by DeVilbiss. By demonstrations, it is clearly shown that paint can be sprayed on interiors without undue overspray by controlling pressures and spray technique.

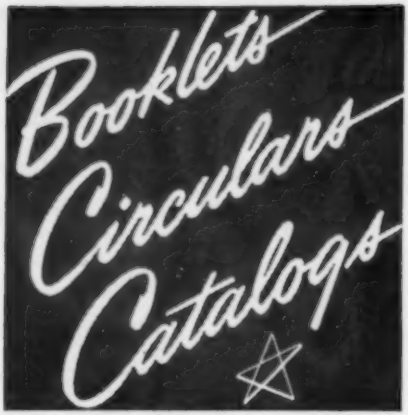
Here are the dates for courses of instruction in industrial spray finishing for the first half of 1955 at the DeVilbiss Co. school of spray finishing in Toledo: January 10, February 7, March 14, April 18, May 16, June 20.

Nilsson, Chief Engineer Of Magnesium Co. Of America

Mr. Hjalmar Nilsson, plant engineer of Magnesium Company of America, East Chicago, Ind., has been appointed chief engineer. Eugene Gallmard has been appointed as administrative assistant to Mr. Nilsson.

Mr. Nilsson has been associated with the company during its years of greatest growth and expansion of plant facilities.

In 1912, soon after receiving his masters degree in mechanical engineering from Strelitz College, Strelitz, Germany, Mr. Nilsson did diesel engine design work in Russia for Alfred Nobel, famous scientist and founder of the Nobel Peace Awards. He received his mechanical engineer degree from Stockholm Technical College, Stockholm, Sweden.



Bulletin On Tumbling

Tumb-L-Matic, Inc., 4510 Bullard Ave., New York 70, N. Y., manufacturer of tumbling barrels and compounds for finishing metal and plastic parts and other materials, offers a new bulletin, Tumb-L-Matic Processes and Compounds for Tumbling Metal and Plastic Parts.

The bulletin describes wet and dry, and combination processes. It gives barrel type, compound and media specifications for cutting, defining, smoothing, polishing, lustering and other operations. Information is in easy-to-read chart form.

Copies may be had by requesting Bulletin P-55 from the manufacturer.

Surface Preparation Folder

Ten modern methods of handling and cleaning small parts before barrel plating, are contained in a table of a new brochure offered free of charge by Platers Research Corp., 59 E. Fourth St., New York 3, N. Y., manufacturer of Nickelite barrel nickel brightener.

Included in the folder is a handy reference guide on thicknesses of deposits obtained under average plating conditions from nickel, cadmium, brass, silver, tin and zinc barrel solutions.

Revised Instructions On Use Of Tempilaq°

The recent addition of newly developed temperature ratings to Tempilaq° temperature indicating coatings has necessitated a revision of the Instructions For Using Tempilaq°.

The new instruction sheet covers: Calibrated liquefaction versus color change as a temperature signal. Survival of Tempilaq° marks subject to high centrifugal force or high velocities. Application to glass and other polished surfaces. Monitoring of electronic power tubes' operating temperatures. Determining maximum attained temperatures during a process. Study of temperature distribution along a surface such as furnace walls, melting ladles, etc.

Those interested may write Tempil° Corp., 132 W. 22nd St., New York 11, N. Y., for the new instruction sheet, and you will also receive a half ounce sample of Tempilaq° 300° F. to illustrate its function.

DuPont Bulletin on Room Air Conditioning Units

A new bulletin on finishing room air-conditioning units is now available, free of charge, from E. I. duPont de Nemours & Co. (Inc.), Finishes Division, Dept. IF-51, Wilmington 98, Dela.

The bulletin entitled, "Room Air-Conditioning Units," covers such interesting and timely subjects as "Appearance and Protection," embracing coverage rates, baking schedules, metal preparation, priming and enameling.

New Alvey-Ferguson Catalog Available

A very attractive and informative catalog has just been issued by The Alvey-Ferguson Co., 747 Disney St., Cincinnati 9, Ohio.

Printed in off-set, two-color, size 8½x11-in., and containing 28 pages and cover, the catalog describes and illustrates the complete line of Alvey-Ferguson metal cleaning and processing machines. One page is devoted to the engineering service available, and two pages list a number of the many concerns now using Alvey-Ferguson product cleaning and processing machines.

A copy may be had without charge, upon request to the company.

New Booklet By The Carborundum Co.

The Carborundum Company has just published a new booklet entitled "Abrasive Grain and Powders," for use in metal finishing. Packed with informative charts and illustrations, the booklet contains many of Carborundum's latest abrasive engineering recommendations. Topics include "Properties of abrasive grain and powders," "Elements of metal polishing," "Preparation and care of polishing wheels," and "General rules for good polishing." The 42-page booklet contains a suggested layout for set-up room and curing room, and devotes a chapter each to metal buffing, metal tumbling, and pressure blasting.

Free copies are available from The Carborundum Company, Niagara Falls, N. Y.

Paint Heater Bulletin

Bede Products Corp., 1005 Jackson St., Amherst, Ohio, has published a 4-page bulletin which describes and illustrates its line of circulating and non-circulating paint heaters. Suggestions are made as to the adaptability of various types of paint heaters for specific operations.

The bulletin also explains the advantages of hot paint application. A copy will be sent upon request.

Paint Stripper Bulletin

Do you have a problem of cleaning conveyor hooks and work holders? The Beck Equipment Co., 3350 W. 137th St., Cleveland 11, Ohio, has published a 4-page bulletin describing Econostrip which is said to remove accumulated paint in 20 seconds.

A copy of the bulletin will be mailed upon request.

Teflon Manual

A comprehensive, illustrated 60-page manual on Teflon, tetrafluorethylene resin, has been published by E. I. DuPont De Nemours & Co., Inc., Wilmington 98, Delaware.

The Manual includes characteristics of Teflon, its uses, properties, how it is moulded, ram extruded, calendered, extruded, coated and impregnated. Also included are use of fillers with Teflon, standard products made of the resin, fabricating and coloring techniques.

A copy will be sent free upon request to those who are interested.

1955 Silicone Reference Guide

Silicones are playing an important part in industry's increasing emphasis on product improvement and production economy. New uses are being developed for all silicones, and new special-purpose products are hitting the market in an ever-increasing stream.

Ample evidence of the trend is seen in the 1955 Reference Guide just issued by Dow Corning Corp., Midland, Mich. Twice the size of last year's, the catalog lists some 23 brand new products besides the 100-odd mentioned in the previous issue.

To give engineers a maximum amount of information in limited space, the 1955 Guide contains many tables, graphs and photos. Comparable data on various silicone products and the organic materials they displace are also given to permit preliminary evaluation. As usual, descriptive copy is close-cropped, and full of facts. A copy will be sent upon request.

ELIMINATE COSTLY REJECTS IN YOUR FINISHING DEPT. WITH DETROIT "TAC" RAGS

DETROIT "TAC" RAGS are an absolute necessity for cleaning any metal, wood or plastic surface before painting. Removes all dust, lint and sanding particles. Order today through your supplier.
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You get uniform, accurate masking every time with Brady Pre-Cut Masks. Use for spraying, sand blasting, stenciling. Made to meet your requirements. Come on handy Blue Streak Dispenser Cards or folded liner for fastest peel-and-apply time. Hundreds of shapes and sizes in stock. Specials made to order. Free usable samples and literature. Write:

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Manufacturers of Self-Sticking Industrial Products
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EST. 1914

Industrial FINISHING Editorial

Fire! Quick! Use the Right Extinguisher

If you have ever heard the cry of "fire" in a factory, office or home, you know the feeling of fear and apprehension that goes through you. Usually the people within hearing distance are scurrying every which way.

There is such a thing as panic. Otherwise, at the cry of "fire," all of those within hearing distance would move in an orderly fashion, each one to do the job of protecting himself or the property.

Usually — eventually — one person takes command of the situation; and by his calmness he restores order to the group.

The first thing that must be done is to get a fire extinguisher. But now is not the time to look for it. Every person in the organization should know the exact location of every fire extinguisher before a fire starts.

Having found the extinguisher, one now begins to read the instructions. On this particular extinguisher, it so happens that the instructions are printed in relief on a brass plate that is somewhat corroded or defaced. Even in the peace and quiet of a library, one could hardly read these instructions in their present condition.

Now, obviously, is no time to read instructions on any extinguisher. Every person in the organization should not only know where every fire extinguisher is, but should also know how to use it—before a fire starts.

There are various kinds of fires—and no one extinguisher is effective for all of them. Again, the time to find out about the different kinds of fires is not when your department is going up in smoke. Every employe should know what possible fires could take place in his department and how to combat them. The size and type of the extinguisher should be suitable for the kind of fire that might take place.

Your fire extinguishers should be inspected regularly—and they should be carefully placed, with good visibility and with an eye toward distance or travel in the department.

Don't wait for a fire. Check your extinguishers now—and see that your employes know how to use them.—*"Management"; Kelly-Read & Co.*

Successful Salesman's Selling Technique

★ Is there a salesman anywhere who hasn't heard those famous words, "Your price is too high!"? Probably not. This expression separates the men from the boys, the salesmen from the order takers.

A capable salesman knows that he must establish the value and quality of his product before mentioning price. He also knows that the subject, "price" cannot be avoided before a sale is consummated. Therefore, the entire presentation regarding the

---

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

product to be sold must be made with the purpose of overcoming price opposition.

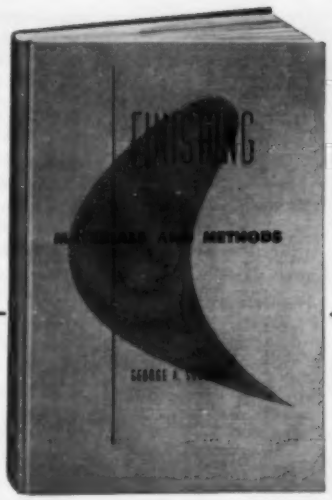
With this in mind the salesman should introduce himself, and his product, by pointing out the advantages in services to be had by dealing with his company. The basic reason for buying is to improve business, and enable the consumer to improve his position in regard to prosperity. Therefore, *the salesman must realize that the service he offers is just as much a part of what he is selling as the product is.*

Recently a salesman for a large wood finishing supply company sold some routine items to a new account, principally because he had stressed the advantages of doing business with him and his company. A short time after the initial sale the new customer was in need of a quantity of specially colored lacquer. Recalling the salesman's assurance of his company's cooperation, the customer called upon this new (to him) contact. He was advised what samples and information were required. Upon submitting these, his order was promptly and correctly filled.

The salesmanship of the company representative had not only obtained the initial order, but was the reason why his organization received the later and more lucrative order. It might be noted here that price wasn't even mentioned in the second transaction. The customer had gained complete confidence in the supplier and the results substantiated his confidence.

Having emphasized the advantages through service to be had by dealing with his company, the salesman can readily point to the fact that it is of real benefit for the prospect to deal with him rather than with competitors who have similar products.

In all this discussion of service, however, the salesman must not for-



THIS book contains much practical and up-to-date information on modern finishing materials, equipment, accessories, supplies, and methods. It has 320 pages, 6x9-in., divided into 31 chapters. Large legible type on high quality white paper, with generous margins and numerous illustrations, make the book easy and inviting to read. Subjects can be easily found either in the table of contents at the front of the book or in the 12 pages of alphabetically indexed subjects at the back.

Chapters I to XXI inclusive deal with materials—paints, varnishes, bleaches, lacquers, enamels, shellac, stain, filler; wrinkle and hammer effect finishes; pearl essence, waxes, flock, masking tape, etc.

The remainder of the book (Section II) contains chapters on finishing methods—spraying, flow coating, roller coating, tumbling, methods of drying, etc. Many references at the ends of chapters give credit for information supplied in articles previously published in Industrial Finishing Magazine.

The book is substantially bound between heavy stiff covers, colored in two tones of light orange and lettered in black. Author of the book is George A. Soderberg, Assistant Professor of Industrial Education, The Stout Institute in Wisconsin.

Price $4.00—Money Back Guarantee

INDUSTRIAL FINISHING

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get to *establish the quality and value of his product in the prospect's mind.* Capable salesmanship requires the interjection of this subject, and of the services to be had, in such a way that the relationship between the two subjects is easily understood and mentally coordinated by the prospective buyer. This synchronization of thoughts, when presented properly, will undoubtedly reduce the resistance to price, and will prepare the prospect to buy on the basis of complete value to be received, and not just with the belief he is exchanging money for goods alone.

To accomplish this the salesman must know his company and his products. He must maintain a never-ending quest for knowledge on these subjects. The more thoroughly he understands this, the better sales representative he will be.

There is another vital factor in regard to the salesman overcoming price resistance. He must understand his prices, and recognize the many factors that govern them. Fixed capital investment, maintenance costs, salaries (including his own), advertising, and other expenditures—all of these are included in the price of a product or service. He must realize that if his prices are out of line the prosperity of the company he represents will suffer too. In other words, the salesman must convince himself of the fairness of his prices before he can hope to convince a prospect of that fact.

Confidence in his company, its prices and policies—and, most of all, confidence in himself makes a salesman appear self-assured and trustworthy, and in this state of mind he is capable of transmitting the same feeling to his prospect. Such a relationship between buyer and seller overcomes many obstacles, including the question of price.

A successful salesman does not accept that old cliche, "Can't afford to!" He proves to his prospect that he "Can't afford NOT to!"—*James J. Morrison.*

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SNYDER BROTHERS COMPANY
Manufacturers of Quality INDUSTRIAL LACQUERS
P. O. BOX 548 — TOCCOA, GEORGIA

Miracle Finishes Have Their Limitations

★ Sensational improvements in industrial finishes in recent years have apparently led some laymen to feel that there is no limit to what coatings can do. Consequently, paint companies are asked from time to time for products that do not exist, as they are beyond the limits of present day technology. For example: A prospective customer recently wanted a one-coat air-dry finish that would remain relatively unchanged and intact for 20 or 25 years. We could not guarantee such performance.

The other day an acquaintance inquired about a relatively new resin he had heard of, a resin that has excellent adhesion to steel.

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PROTECT EYES AGAINST PAINT SPRAY, dust, fumes, gas, smoke, etc. Can be worn with any make respirator or mask. Soft, pliable rubber frames give air-tight fit on any shape face. A few drops of water on inside of lenses keep fog off by a simple nod or shake of head. Sample $2.00 postpaid! Order today!

H. S. COVER, South Bend, Indiana

"Will I be able to dispense with cleaning my metal," he asked, "if I use a finish based on this resin?"

He was informed that he would still need clean metal to get satisfactory paint adhesion, and that we knew of no finish that would adhere as well to dirty metal as it would to clean metal.

The fact that you must have clean metal to obtain good adhesion of protective coatings is well known to the industry. One finds, however, that there are users who ignore this fact. They continually ask the paint salesmen who call on them to get them a finish with better adhesion. The salesman, in turn, goes back to the laboratory and pleads for such a coating.

"If you can't give me something that will really stick to their dirty metal, at least give me something better than what they're now using," he tells the laboratory staff.

So a finish is formulated and presented and tested. It may be an improvement, as some coatings have better adhesion than others. A high grade coating job is not obtained, however.

Any improvements in the coatings field are passed on to customers as quickly as possible. The customers would do well not to try to get from the protective coatings industry something it just doesn't have to offer. —*E.V.G.*

MORSE
VERTICAL DRUM TRUCK
ROCK-A-DRUM

Picks up 55-gal. drums, rolls them over for side draining. Becomes a rugged stand on 3-in. wheels.

Morse Mfg. Co., Inc. 761 W. Manlius Street E. Syracuse, New York

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Any test in F. S. TT-P-141b
PENNIMAN & BROWNE, INC.
Chemists-Engineers-Inspectors
341 St. Paul Place-Baltimore 2, Md.

Central Again Wins Safety Certificate of Merit Award

The Central Paint & Varnish Works, Inc., 59-69 Prospect St., Brooklyn 1, N. Y., has been notified by the Greater New York Safety Council, Inc., that having completed a six-months' period of the Twelfth Inter-Plant Accident Reduction Contest, May 1st to October 31st inclusive, without a lost-time accident, they have thereby earned a Special Certificate of Merit.

The award will take place at a dinner in the Hotel Statler on February 9th, with the key men who helped to achieve this excellent record for the 7th time, being present to accept the great honor.

Random Comment on the Industrial Scene

(Continued from page 6)

dustries, Inc., Jackson, Mich. The use of water—from well, river, lake or stream—as a source of clean, flameless heat is explained, as well as the removal of heat from the interior of a building for cool comfort in warm weather.

Acme points out that the Flow-Temp Pump has been developed to the point where it costs little or no more than conventional, combined heating-and-cooling systems.

* * *

Paint Stripping Rack. The cost of stripping old paint from freight cars, passenger cars and locomtives can be sharply reduced, and the time cut down to minutes, with the help of a simple paint stripping rack developed by the Pennsylvania Salt Mfg. Co.

The rack, designed in cooperation with the Mechanical Department of an Eastern railroad, saves paint stripping solution by returning the run-off to the solution tank for recirculation. By using a stripping rack on both sides of the track, cars can be stripped completely in a matter of minutes. The equipment can be made up by railroad labor forces from readily available shop materials.

Free schematic blueprints of the paint stripping rack can be obtained by writing to Pennsylvania Salt Mfg. Co., Maintenance Chemicals Department, 1000 Widener Bldg., Philadelphia 7, Penna.

* * *

Heat Before Paint. In Chromalox News, issue No. 53, we see a setup where clean reconditioned steel drums are preheatd at 175° F. just before being painted. Quoting from the item:

"At this temperature paint adheres well without blistering—and dries fast. Production increased; time decreased to 15 minutes from four hours. In addition, there is another saving; less paint is needed when coating preheated surfaces. Six Chromalox Radiant Heaters form a tunnel in which the barrels are heated while rotating on spinners.

* * *

Screen Process Printing. "Wrinlay" is the name of new screen process printing which is so precise that it can be safely used on aircraft and electronic instruments.

To accomplish this precision, silk which is dimensionally unstable due to changes in humidity, is replaced by metallic meshes of nickel alloys (monel and type 304 stainless steel)

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TEST PANELS
Your Panels returned Pre-sanded and ready for use.
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Internationally
Known Research Chemist & Spray Painting Authority
at your service
WILLIAM BEACHAM
Finishing Consultant
CRYSTAL LAKE, ILLINOIS
Phone C. L. 1302-M-2

as well as phosphor bronze in mesh counts up to 230 wires per inch in each direction.

This process consists of printing a resin coated surface that is dry, but unpolymerized, with a printing ink of the same chemical composition. After printing, the parts are baked, causing polymerization of the resin coatings . . . . thereby making the printing as permanent as the surface finish itself. A product of Photo Chemical Products, Inc., 379 Walton Ave., New York 51, N. Y.

* * *

Lacquer Aluminum. The finish of architectural aluminum can be effectively enhanced and preserved with lacquers made from a new cellulose polymer, half-second butyrate, according to W. M. Gearhart and F. M. Ball of Eastman Chemical Products, Inc., a subsidiary of Eastman Kodak Co. Properties of half-second butyrate films mentioned by the Eastman spokesmen are toughness, clarity, flexibility, ultraviolet resistance and stability.

* * *

Plastics for Housewares. Tougher, more colorful plastics for housewares are setting the pace for rap'd expansion of the $1¼ billion housewares and appliance market. . . .

R. C. Evans, director of marketing of Monsanto's Plastics Division, believes that last year, plastics for housewares will account for approximately 80 million pounds of styrene, vinyl and polyethylene.

"Retail sales of plastics housewares last year amounted to better than $130 million," Evans said, "but this year we should see at least a 15% increase." Styrene applications are largest, with polyethylene second and vinyl in third spot.

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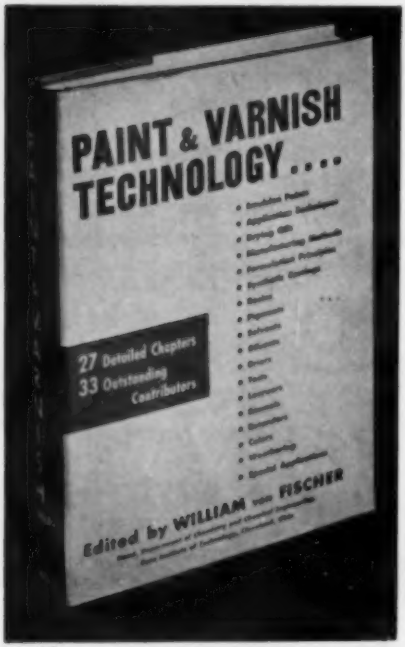
IDEAL TACK RAGS
FOR A PERFECT FINISH
Bulk or Bagged
IDEAL CHEMICAL COMPANY
1499 Dean Drive, South Euclid 21, Ohio

Fire Retardent Roofing. Fire-retardent Koroseal flexible material is being used in a new roof construction which may prevent future disastrous industrial fires such as those which recently leveled two major automotive plants.

Developed by Lexsuco, Inc., Cleveland, the new roof construction utilizes a "vapor barrier" of Koroseal flexible material. One of the first major installations is currently taking place on the new Ford Motor Co. engine plant No. 2 in Brookpark, Ohio.



505 pages, illustrated
Price.....$8.00

This is the first comprehensive one-volume presentation of the chemistry, formulation, manufacture and applications of paints, varnishes, lacquers and enamels. There is a wealth of information on such subjects as exposure tests, viscosity, film properties, hiding power, special applications and surface preparations. A valuable addition to your personal library. Send for it NOW!

For immediate delivery, order from:

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Heagstedt Elected President of Tousey Varnish Co.

At a special meeting, the Board of Directors of the Tousey Varnish Company, Chicago, elected Carl R. Heagstedt, president, Bradford W. Alcorn, vice president, and Harry D. Wright, secretary. Ralph F. Kendig remains as treasurer.

Mr. Heagstedt replaces the late William R. Alcorn, who was a pioneer with Tousey, having joined the company in its infancy. Mr. Alcorn advanced through various executive positions to become president in 1924. He remained active until the past few years, when the heavy load of responsibility was gradually shifted to Mr. Heagstedt.

C. R. Heagstedt and B. W. Alcorn

Carl R. Heagstedt left the National City Bank in 1920 to join the Tousey organization. He became secretary in 1928, and vice president in 1935. Mr. Heagstedt is an active member of the Farm Equipment Institute, being a past president of the Auxiliary. He is also a member of the Butterfield and Westmoreland Country Clubs, and a member of the Chicago Athletic Association.

Bradford W. Alcorn, son of the late President, joined the manufacturing divisioon of the Tousey organization after finishing school in 1932; later he was transferred to the sales end, and in 1941 was made secretary of the company. He became sales manager in 1948, in addition to his secretarial duties, and will retain this phase of operation in his new position. He is a member of the Chicago Athletic Association.

Harry D. Wright came to Tousey in 1936. He was placed in the production end of the business where he stayed until 1943, at which time he was made director of purchases, which title he will retain in addition to that of Secretary.

Ralph F. Kendig, re-elected as treasurer, has held that office since 1950. He joined Tousey in 1936 with a background of accounting, and has been in the financial division of the Company.

Founded in 1885, Tousey makes paints, varnishes, lacquers, casting sealers and synthetics for the farm equipment, construction and industrial fields. It will celebrate its 70th Anniversary this coming year.

Expansion Program Started By N. Y. Woodfinishers

The New York Woodfinishers' Supply Co., Inc., 109 Imlay Street, Brooklyn, N. Y., has started its program of expansion by installing fifteen additional large underground tanks for handling of solvents.

The newest and most modern pumping and metering systems, together with new manufacturing facilities, will aid in the program of increasing productioon of lacquers, sealers, baking enamels, stains, etc.

The new installations will help create more manufacturing space, speed up its efficient service, and place the company in an excellent position to take on additional business.

Heat may not make dirt, as the old saying goes, but it certainly helps to circulate it. Have your ovens been cleaned lately?

Here are new officers of the Kansas City (Mo.) Paint, Varnish & Lacquer Ass'n.: Seated in middle is D. E. Eichelberger, President. Left to right, above, are: Ted Terhurst, Treasurer; J. R. Seidlitz, V.P.; and H. E. Anderson, Secretary.

Wire Baskets and Trays

Wire baskets and wire trays are shown in a new 12-page catalog offered by Wiretex Mfg. Co., Inc., 40 Mason St., Fairfield, Conn. Baskets and trays are used to handle parts during various production processes, including cleaning and dip coating. They are custom built in every size, mesh and alloy. A wide variety of baskets and trays are illustrated, along with fixtures, crates and tanks for special processes.

CVC QUALITY
Custom Finishes for METAL
Engineered to solve your problems. Write for full facts.
Quality Custom Finishes Since 1865
CINCINNATI VARNISH CO.
CINCINNATI 12, OHIO

DE-ICE-IT
Remove ice and snow the easy, harmless DE-ICE-IT chemical action way . . . economical . . . labor-saving. *Write today!*
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"Since 1916"
Dept. IF P. O. Box 1341
Dallas, Texas

CRS
METAL FINISHING CONSULTANT
With a well-known record of achievement. Let me help you.
Since 1928
C. Raymond Syer
Beverly Hills, California

HERE ARE enumerated in this remarkably valuable book of 544 pages, all of the common and a variety of unusual and seldom heard-of defects and objectionable features that occur in paint, varnish, lacquer and synthetic enamel finishes; their probable, possible or real causes given; the effects described, and means of preventing and remedying these troubles fully outlined.

Chapters deal with these defects and troubles as they occur, 1) during or as a result of storage and preparation of materials before finishing; 2) when the materials are applied by various production methods and equipment, 3) during handling, processing or drying after application; and finally, 4) when and after the finished goods are shipped, displayed, stored or placed in service.

Defects covered include many more than could be named here, but to mention just a few there are: runs, sags, tackiness, films too thin or too thick, slow drying, orange peel, alligatoring, wrinkling, pimples in films, pinholing, cracking, blistering, lifting, bleeding, blushing, blooming, discoloration, rainbow effects, gloss and dull areas, grained appearance, and scores of others.

Practical information is also revealed in reference to safety precautions to prevent fires or accidents in paint shops and finishing rooms, skin troubles of workmen, poison from paint materials and fumes.

By referring to the "Subject Index" of 84 pages in back of the book, it is possible to locate quickly, the answer to any particular failure, cause or remedy.

Price $12.00—Money Back Guarantee.

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Metal Cleaning Booklet

A free 12-page illustrated booklet entitled, "What You Should Know About Metal Cleaning," is offered by the Metalwash Machinery Corp., 935 North Ave., Elizabeth, N. J. With an introduction on the fundamentals of metal cleaning, the booklet discusses types of cleaners, washing cycle, cleaning prior to plating, cleaning prior to painting, pickling prior to enameling, pickling between drawing operations, and the application of metal parts processing machinery to the metalworking industry.

New Technical Director at Carolina Paint & Varnish

Grant E. Arhart has been appointed technical director of Carolina Paint & Varnish Works, Greensboro, N. C., by R. G. Brooks, general manager. Mr. Grant is being transferred from the Pacific Paint & Varnish Co. where he has been associated with the Sears paint factories for the past several years. He was graduated from North Dakota State College in Fargo and was an experienced paint chemist when he joined Pacific. This appointment has been made in order that R. A. Prokop, who has been coordinating Carolina's technical and sales problems, can spend full time as sales manager in the southeast.

Cambere Asst. To President Of Stewart-Warner Corp.

Ara A. Cambere has been named assistant to Bennett Archambault, president of Stewart-Warner Corp. Mr. Cambere will be responsible for the activities of Stewart-Warner Corp. in connection with its program of diversification and expansion by the acquisition of new products and businesses.

A native of New York, Mr. Cambere is a graduate of the Wharton School of Finance, University of Pennsylvania. He is a member of the Duquesne Club and the St. Clair Country Club, both of Pittsburgh, and the Lawyers' Club and Seventh Regiment Association of New York.

Enthone's Ardco Expands Sales Territory

Enthone, Inc., New Haven, Conn., manufacturer of metal finishing and electroplating chemical products, announces the assignment of additional territory to their Chicago manufacturing distributor, Ardco, Inc. Through their resident sales engineer, Mr. James P. Hendrickson, Ardco will now service

southern Illinois and eastern Michigan from his office at 3738 Washington Blvd., St. Louis, Mo. He may be reached by telephone at St. Louis, JE 5-7300.

All Enthone products will be available in that territory, with shipments being made from Chicago. Purchasers will benefit from the lower freight costs and shorter time for transportation.

Enthone's service engineer, Mr. Robert Goodsell, will also be available when needed.

New ACP Folder Available

A new four-page, 8½x11-in. folder, pertaining to chemicals for metal protection and paint bonding, has just been published by the American Chemical Paint Co., Ambler, Penna.

It fully describes and gives specifications of the ACP chemicals for treating aluminum, zinc and steel surfaces. Copies will be sent free upon application.

New R-M Technical Service Representative

William Oberg has been appointed Technical Service Representative, specializing in furniture finishes technology, for Rinshed-Mason Company of Canada, Ltd., it has been announced by Frederick G. Weed, company president. Mr. Oberg has for the past fifteen years concentrated in the field of furniture finishes.

Besides furniture finishes, R-M of Canada manufactures automotive and industrial lacquers, enamels and undercoats, and a line of house paints under the trade names—Castle Tone and Castle Guard. The plant is located in Windsor, Ontario.

Herter and Melchior Added to J. O. Ross Detroit Office

Charles R. Herter has been made District Manager in charge of the Detroit office of J. O. Ross Engineering Corp., a national organization engaged in the design and manufacture of industrial air systems. Mr. Herter is a mechanical engineer graduate of the Illinois Institute of Technology, formerly the Armour Institute in Chicago. He was an industrial engineer with two other concerns before joining the Ross organization.

Another addition to the firm's Detroit office is John Melchior, a graduate in Mechanical Engineering from Purdue University. Mr. Melchior has had several years experience in the designing and selling of dust collecting, ventilating and material handling equipment. He will continue to handle this type of work as a sales engineer for Ross Engineering.

CLASSIFIED ADVERTISING

The rate on ads appearing in this department is $1.00 per line of 6-pt. light face type, per insertion. Minimum charge, $5.00. Ads set in 8-pt. extra bold face type cost $2.00 per line, per insertion.

POSITION WANTED.

Experienced Industrial Finishes salesman with following in New England area, would like to join sales force of eastern manufacturer. Resume sent on request. Address IF-282, care Industrial Finishing.

POSITION WANTED.

An efficient finishing foreman, in early thirties, with artificial graining experience as well as natural wood finishing and some metal finishing. Available February 1st. Address IF-281, care Industrial Finishing.

POSITION WANTED.

Wood finishes chemist. Ten years' experience formulating lacquers, sealers, stains, fillers, toners, varnishes and synthetic coatings. Capable of sales, service or laboratory work. Prefer eastern location. Address IF-291, care Industrial Finishing.

WOOD FINISHING FOREMAN

For large store fixture manufacturer in Providence, R. I. To work with and supervise 5 men. Must be production minded and experienced in all phases of wood finishing. State qualifications. Address IF-283, care Industrial Finishing.

WANTED.

Man for Research and Development department of New England company manufacturing metal finishing products with national distribution. Must have broad experience in metal finishing and plating, and be willing to travel and lecture. Ultimate position to be director of Research and Development. In reply, give full details on technical background, experience, previous employment and salary requirements. All replies will be held confidential. Address IF-289, care Industrial Finishing.

SALESMEN WANTED.

Industrial salesmen with experience. Territories open in Eastern and Central Zones. Reply to PRATT & LAMBERT-INC., Industrial Division, Buffalo 7, New York, giving qualifications.

WANTED.

Experienced salesman selling a complete line of industrial finishes. Good laboratory cooperation. Liberal commission. Replies held in strict confidence. Address IF-275, care Industrial Finishing.

WANTED.

Experienced service man in wood finishing. Must be able to mix stains and run samples at furniture plants. Travel in Wisconsin and Upper Michigan. Good salary, commission and expenses. Home every week-end. Address IF-284, care Industrial Finishing.

WANTED.

Industrial experienced service representative for practical demonstration and service for the metal finishing trade. Excellent opportunity for the right man. Write LILLY VARNISH CO., Indianapolis, Indiana.

SALESMAN—INDUSTRIAL FINISHES.

Well established and expanding manufacturer in the Newark area will consider an experienced man with proven record of achievement selling industrial finishes. Our proposition and an exceptional opportunity for security and high earnings allow us to insist on highest qualifications. Open territory. Excellent lab cooperation. Answer in detail. Replies confidential. Address IF-290, care Industrial Finishing.

SERVICEMAN WANTED.

An established wood and metal finish house has an opening on its service staff and is looking for an experienced wood furniture finisher. Some metal finish background would be helpful.

Please advise in first letter past ten-year connections. Length of service at each, giving name of person we may address letter of recommendation.

Advise what starting salary would be interesting. Address IF-259, care Industrial Finishing.

INDUSTRIAL SALESMAN WANTED.

Unusual proposition for man with some experience selling or servicing either industrial paint or steel accounts. Northern Indiana. Address IF-285, care Industrial Finishing.

SALESMEN WANTED.

Manufacturer of Lacquer and Industrial Finishes on East Coast in midst of expansion program. Several territories open for right men. Well equipped lab and plant facilities back up our salesmen. Write stating experience and territory interested in. All replies held in strictest confidence. Address IF-269, care Industrial Finishing.

SALES REPRESENTATIVE.

Experienced, to handle complete line of lacquer products of a quality lacquer manufacturer. Excellent opportunity for live wire. Our personnel know of this opening. Address IF-266, care Industrial Finishing.

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To the outstanding Industrial Finishes Salesman who reads this ad—If for any reason you are contemplating a change or a chance to better your future there is an opening with a manufacturer of quality industrial finishes located in Chicago area. Such a man must be a proven salesman of outstanding ability, character and industry to merit consideration. There is no ceiling on the initial drawing account against commission that is available to anyone who has the desired qualifications. State full details—all replies confidential. Our employees know of this ad. Address IF-288, care Industrial Finishing.

EXCEPTIONAL OPPORTUNITY

For a man with Industrial Finish, selling, Laboratory, or manufacturing experience, to become interested in management and ownership of well-established factory with national distribution. Principal owner wishes to retire and will offer part or all of his interest to men who, from experience and ability, are capable of successfully operating the factory. Payments for stock can be arranged over a period of years. No investment will be required for the first year or until present owner is satisfied that he is turning the management over to capable men. Give full information in first letter regarding Industrial Finish background, compensation expected, etc., which will be held in strict confidence. Address IF-286, care Industrial Finishing.

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DeVilbiss Degreasing and Washing Booths with Pump and CO2 Protective System.
R. C. Mahon Spray Booths with Blower, Pump, Filter, Turntable, Etc.
Barrett Centrifugal Enameler for Fliwhirl or Dipspin Methods.
Binks and DeVilbiss Pressure and Mixing Tanks. Sizes 5 to 125 Gallons.
C. M. Hall Infra Red Oven, Degreasers, Blowers, Motors, Switches, etc.
Send list of what you want to buy or sell to

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Design and sales engineer for industrial drying and baking ovens. Excellent opportunity for man capable of organizing and expanding sales of nationally advertised manufacturer. Give full resume of experience and salary requirements. Address IF-277, care Industrial Finishing.

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Offer complete one year old paint conveyor with drying and baking facilities: 450' R-W Conveyor track, 1 steam heated drying oven w/all necessary motors and electrical equip., 8 sections Fostoria Infra-Red Ovens.

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FOR SALE.

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Five Bede and Graco Paint circulators.

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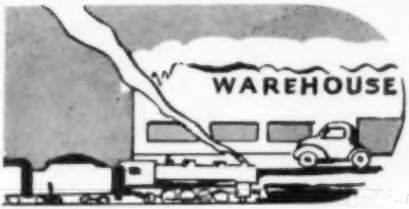

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